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June 23, 2004

Ex Parte

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, WC Docket No. 03-173

Dear Ms. Dortch:

This letter responds to Staff's request that Verizon provide evidence comparing the characteristics of the outside plant in Verizon's network and the plant produced by the HAI model. The attached maps compare the loop routes resulting from Verizon's model and the version of the HAI model sponsored by AT&T and MCI in the current Washington TELRIC docket (UT-023003) with the actual road network in Washington state. As discussed below, the actual road network is a close approximation of where most of the actual cable routes are located.

Routing refers to the cable path between the serving wire center (SWC) and end-user locations. The routes that cables traverse have several significant effects on cost. The first and most obvious factor is the route length – the longer the route length, all else being equal, the more cable that is required, and the higher the amount of capital required to serve the route. In addition, the manner in which cables sub-divide between the central office and customer locations will affect the number of splices, the makeup of cable sizes and types, and the utilization of the cable. These factors also affect loop costs. For example, because a larger cable generally has a lower unit cost than a smaller cable, a route design with a longer feeder cable generally will have lower costs than a design with a shorter feeder cable that then branches out into smaller distribution cables. When engineers actually plan and provision an outside-plant network, they must consider these routing cost factors and try to minimize costs, while at the same time accounting for real-world constraints. For example, the cable path must account for real-world boundaries and obstacles such as lakes, parks and other geographic constraints, as well as adhere to rights of way within municipalities, counties, or townships and respect property rights.

Most cable routes follow roads because road routes provide the best opportunity to work within these real world boundaries and obstacles. Roads already take account of geographic constraints, and they generally provide an accessible right of way that does not require negotiating with individual property owners. Feeder cables are typically placed along major corridors and main thoroughfares in the center of a

community, while distribution cables are usually routed along smaller roads that branch into neighborhoods, side streets, alleys, etc.

In the ongoing Washington UNE cost case, both Verizon and AT&T/MCI filed cost models to support their respective UNE rate proposals. Verizon submitted testimony by Christian Dippon, an economist who works at NERA, that analyzed and contrasted the cost models, including the network routing schemes each model generated.^{1/} To compare the routing schemes between the two models, Mr. Dippon plotted the outside-plant networks generated by the models and overlaid them on road maps for each wire center in Verizon's service territory in Washington. These maps are attached to this letter as exhibit A (the route structures generated by Verizon's model) and exhibit B (the route structures generated by the HAI model).

As these maps demonstrate, the cable routes produced by Verizon's model generally follow streets and roads, avoid obstacles, and reflect real world rights of way. This is not surprising, because Verizon's modeled routes are based on Verizon's actual network topology for key points in the network. Verizon uses the actual location of these points to derive an efficient cable routing scheme for the modeled network. The result is a network routing structure that is very similar to the actual routing structure Verizon has in place and that takes account of real-world constraints.

The HAI model, on the other hand, does not yield realistic cable routes, because, unlike Verizon's model, it is not based on known locations of basic points in the network, but instead is entirely hypothetical. As demonstrated by the maps in Exhibit B, the HAI model's failure to reflect what is known about the location of network components results in model cable routes that diverge wildly from the streets and roads contained in actual maps. Indeed, the HAI model's distribution and feeder plant intersect freeways, are routed through lakes, and are placed in the ocean. To take just two examples, in the Richmond Beach wire center (RCBHWAXX), the HAI produces a few rectangular distribution areas that do not even reach the majority of the customers in the wire center. In the Chelan (CHLNWAXX) wire center, the HAI model places the serving area interface (SAI) in the middle of a lake.

As this evidence demonstrates, the use of hypothetical cost models such as the HAI model results in a routing structure that bears little resemblance to how efficient network routing occurs in the real world and that does not even reach many customer locations. By contrast, the design of the incumbent's network reflects the efficient balance that engineers must strike between minimizing costs and accounting for real-world constraints such as geographic obstacles. Thus, the Commission should reform its UNE pricing rules to provide that the network design should be based, not on a hypothetical network, but on the actual locations of key points in the incumbent's network.

Sincerely,



cc: Tamara Preiss
Steve Morris
Jeremy Marcus

¹ Reply Testimony of Christian M. Dippon, submitted on behalf of Verizon Northwest, Inc., Docket No. UT-023003 (Apr. 27, 2004).

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community, while distribution cables are usually routed along smaller roads that branch into neighborhoods, side streets, alleys, etc.

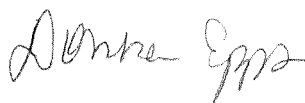
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Sincerely,



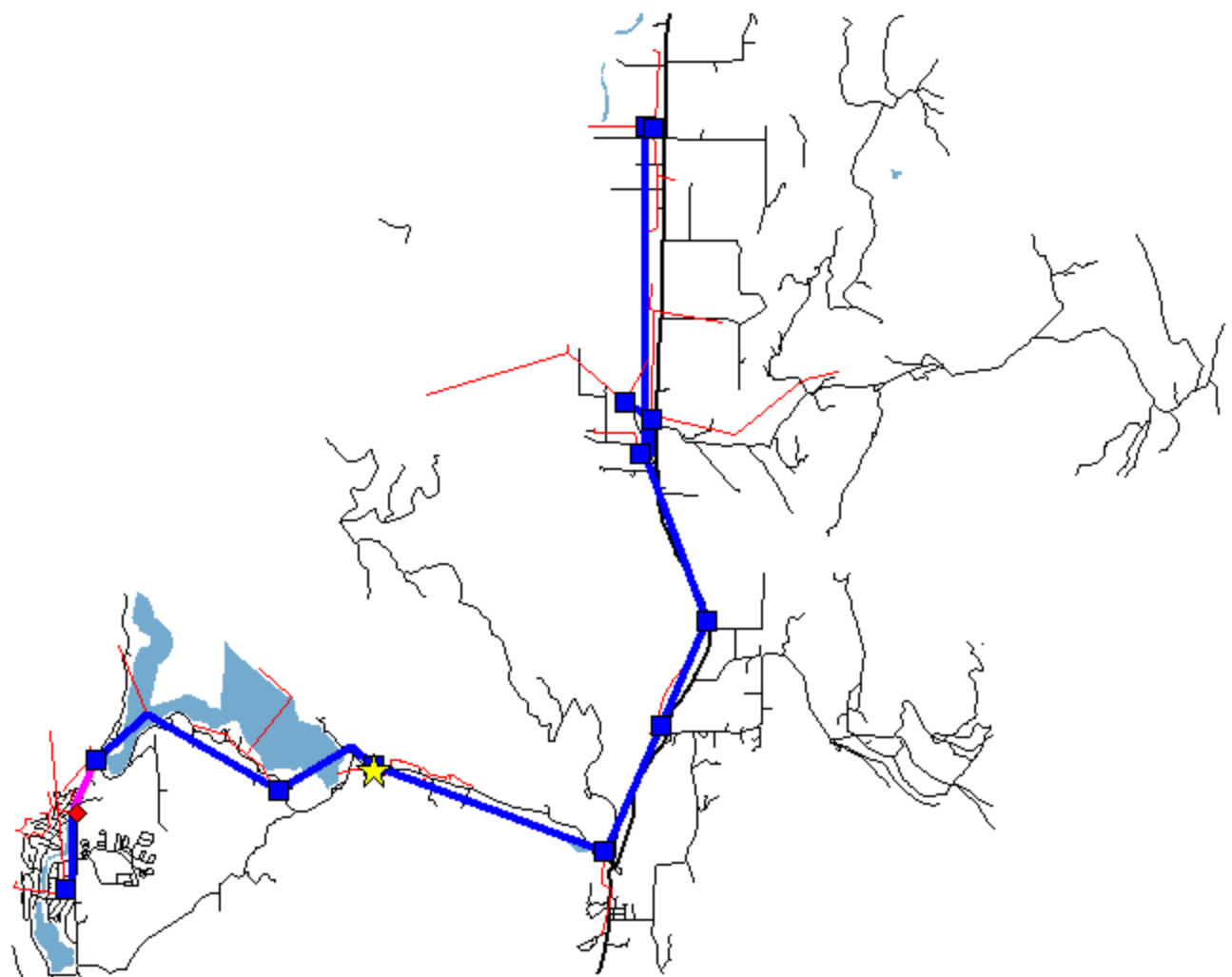
¹ Reply Testimony of Christian M. Dippon, submitted on behalf of Verizon Northwest, Inc., Docket No. UT-023003 (Apr. 27, 2004).

EXHIBIT A

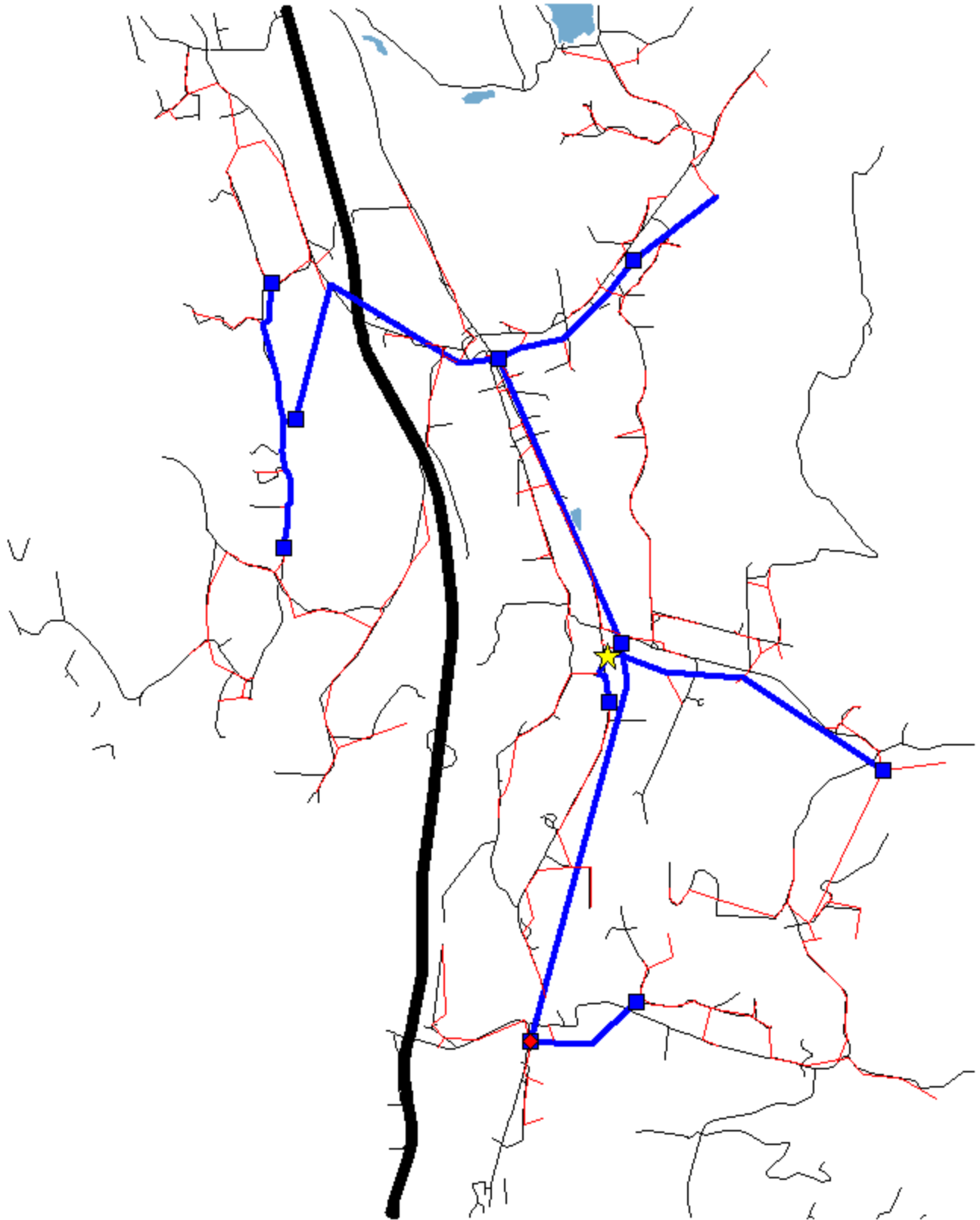
Exhibit CMD-6 (VzLoop)
Reply Declaration of Christian M. Dippon

	Central Office Switch
	DLC or DLC/Crossbox
	Crossbox
	Fiber Feeder
	Copper Feeder
	Distribution
	Primary Highway (limited access)
	Primary Highway
	Major Road
	Minor Road
	Water

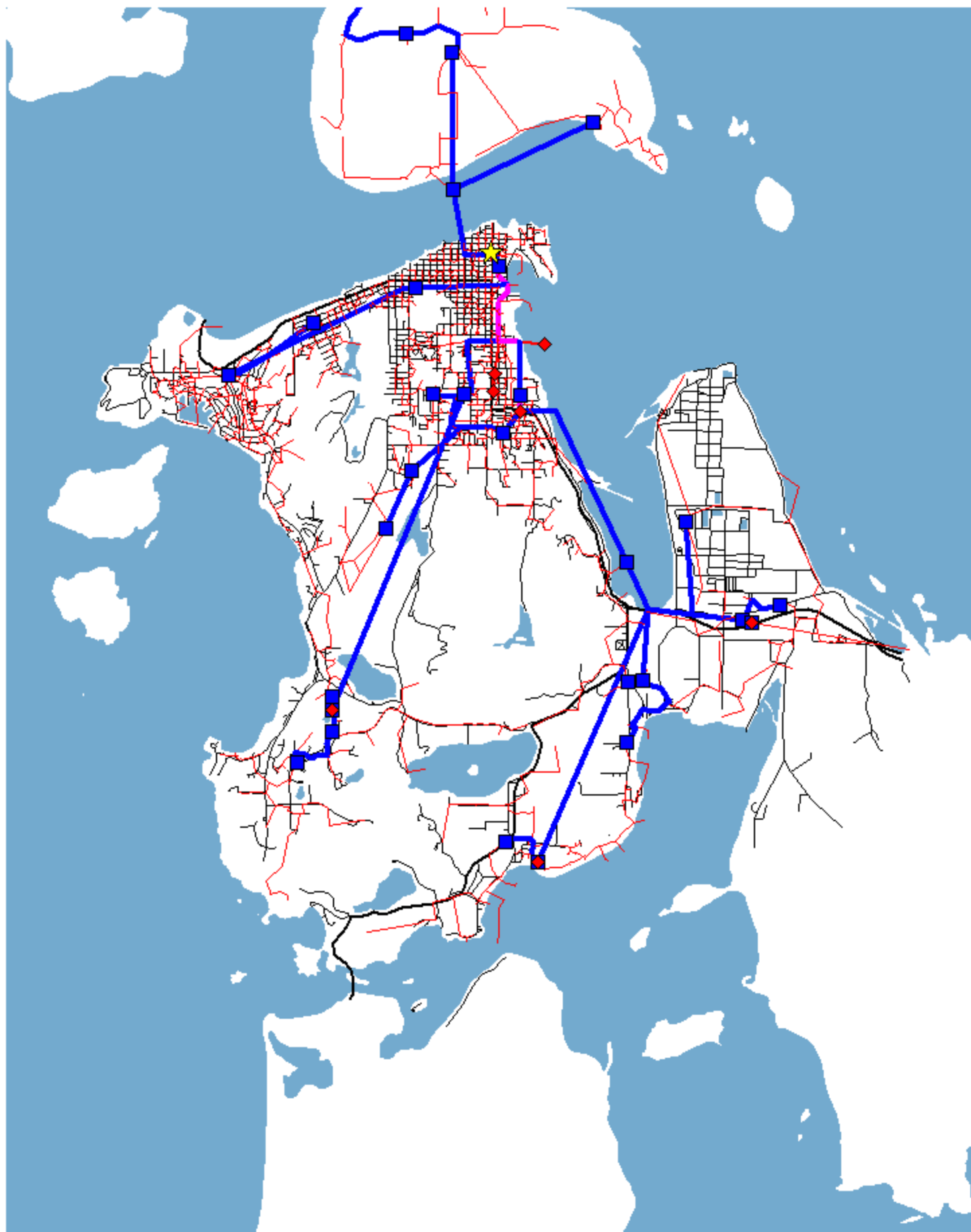
ACMEWAXA: VzCost Network



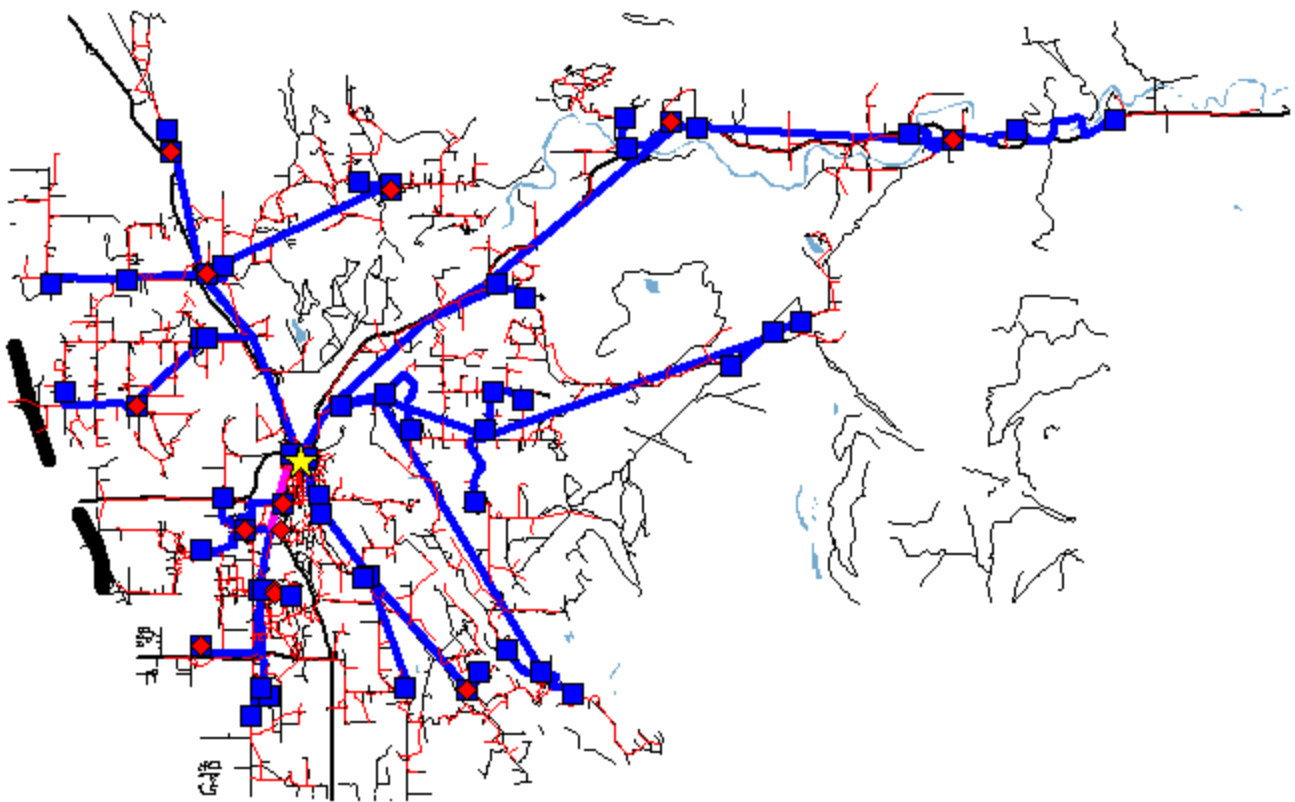
ALGRWAXX: VzCost Network



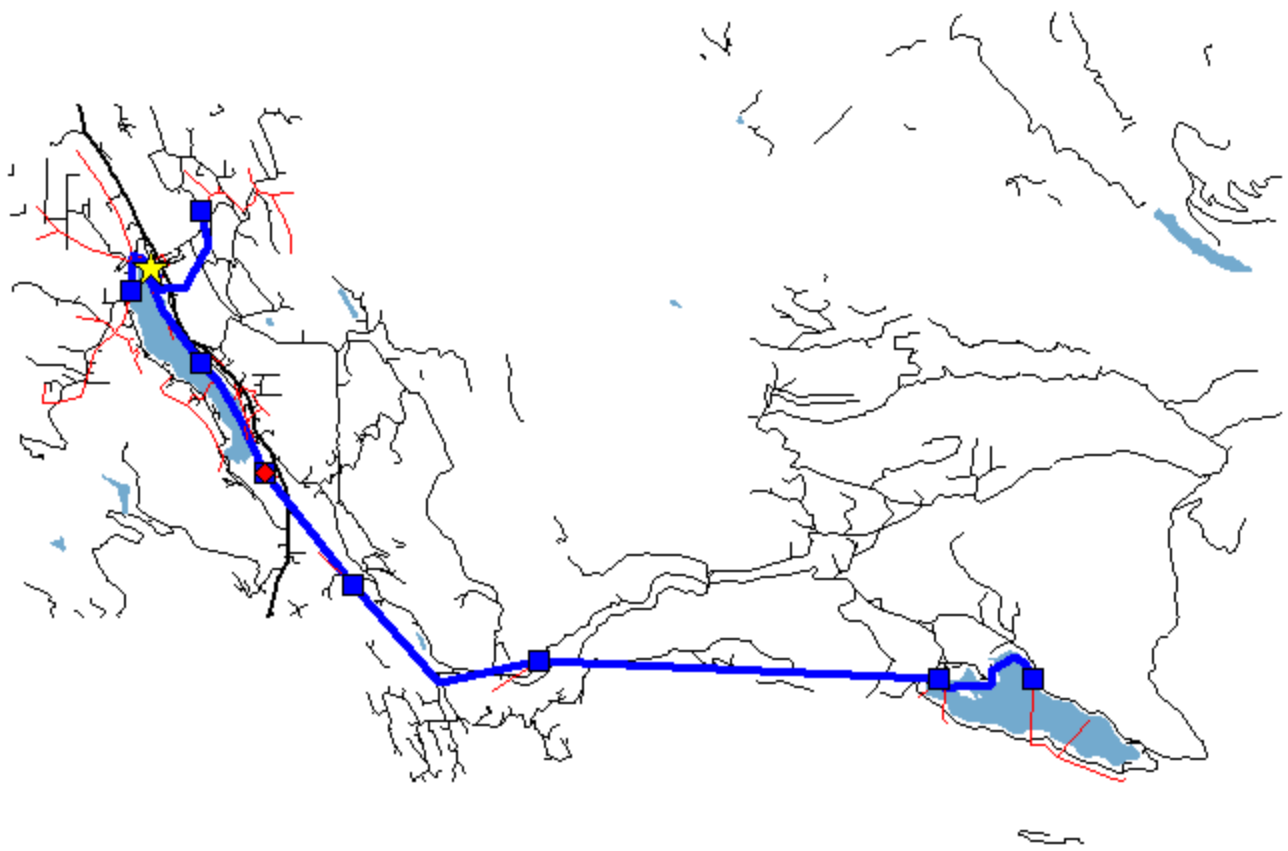
ANCRWAXX: VzCost Network



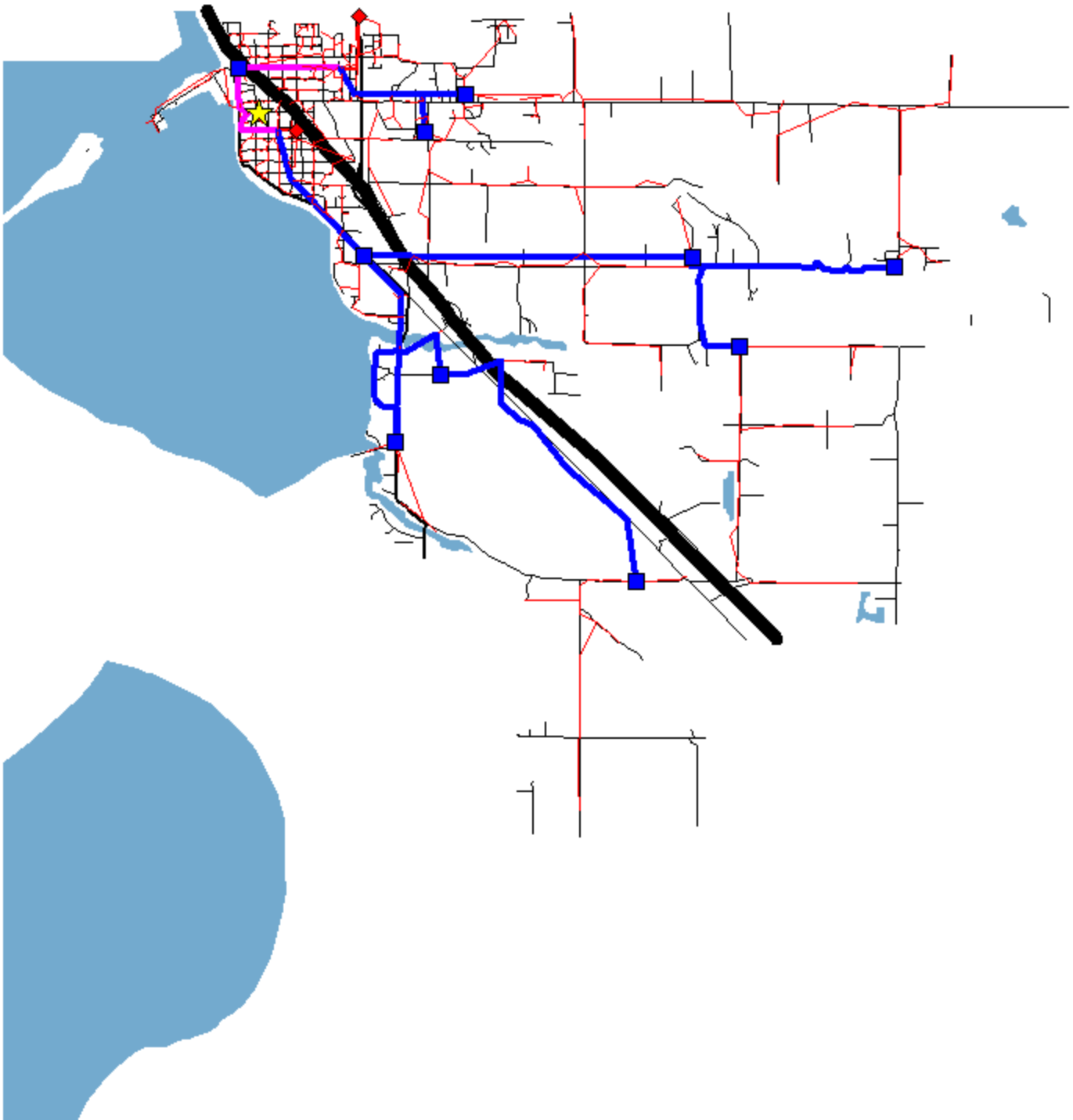
ARTNWAXX: VzCost Network



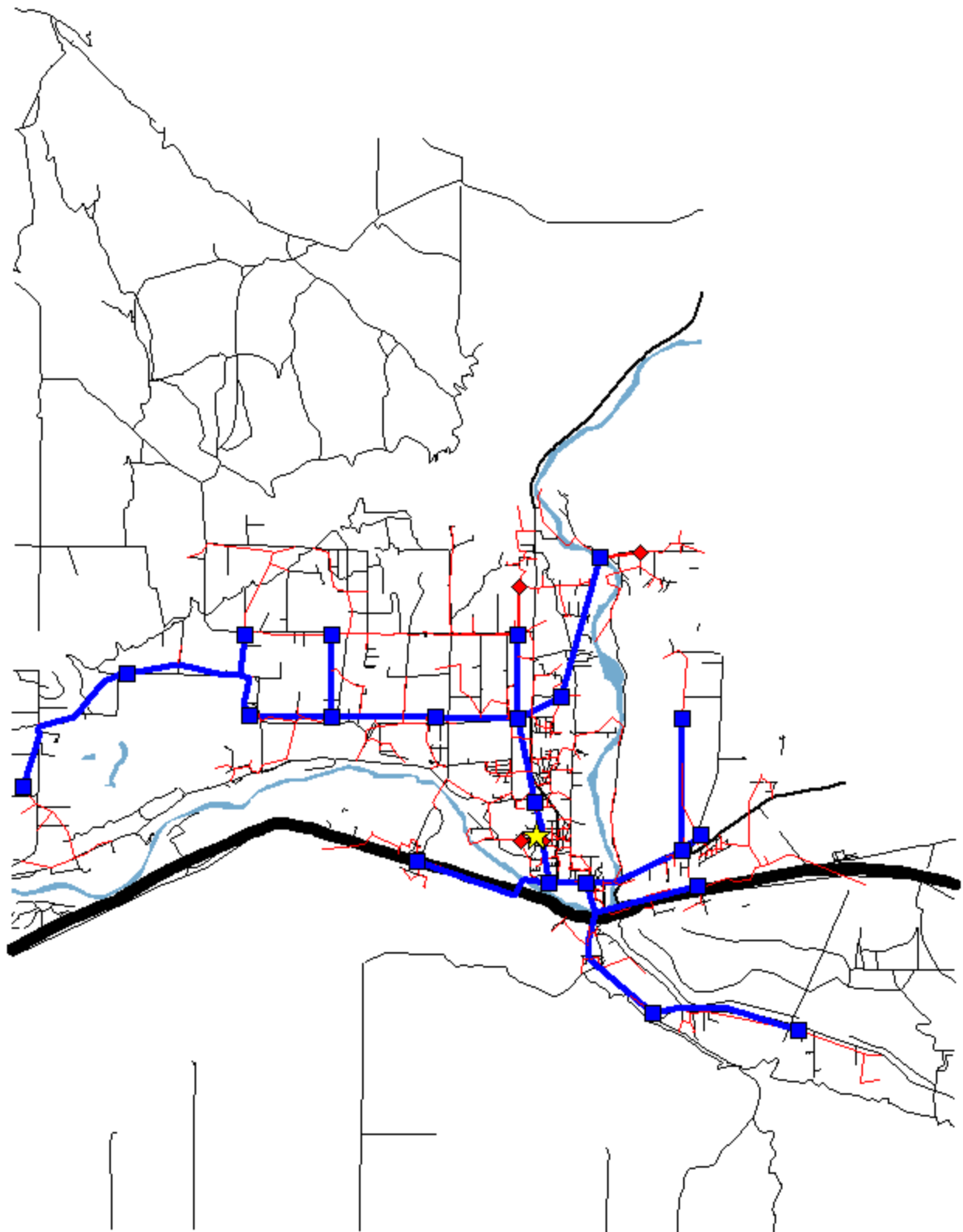
BGLKWAXX: VzCost Network



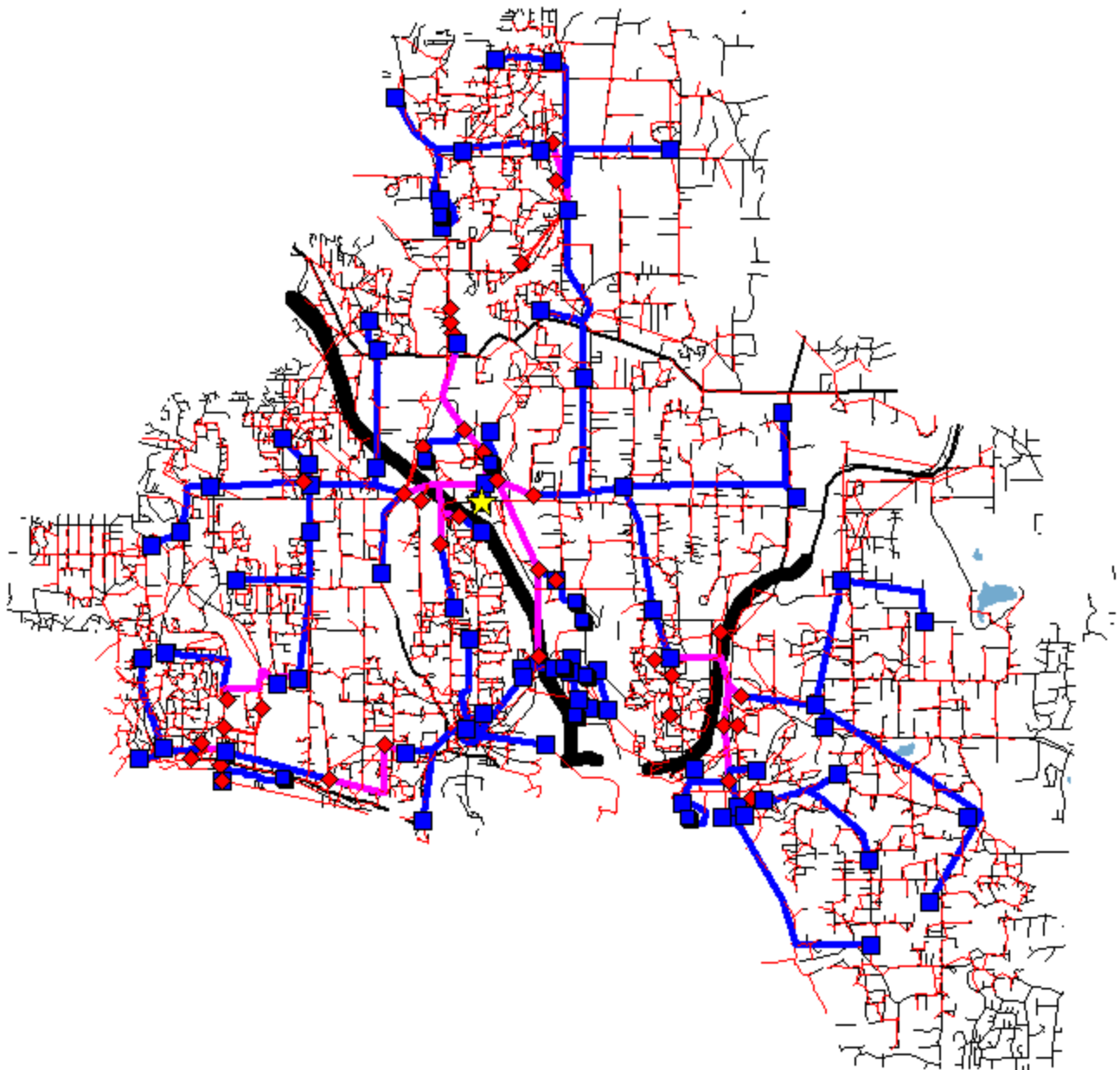
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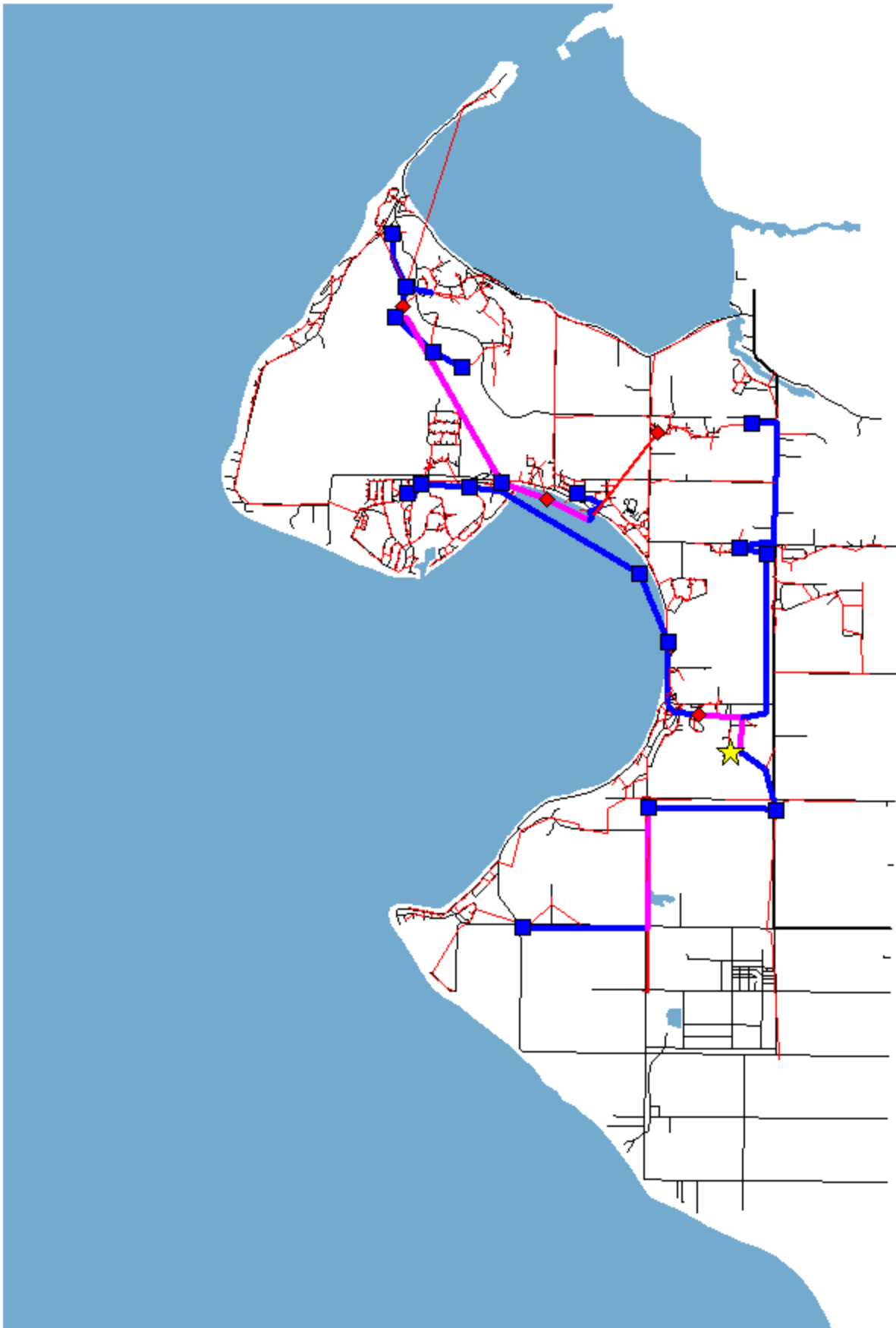
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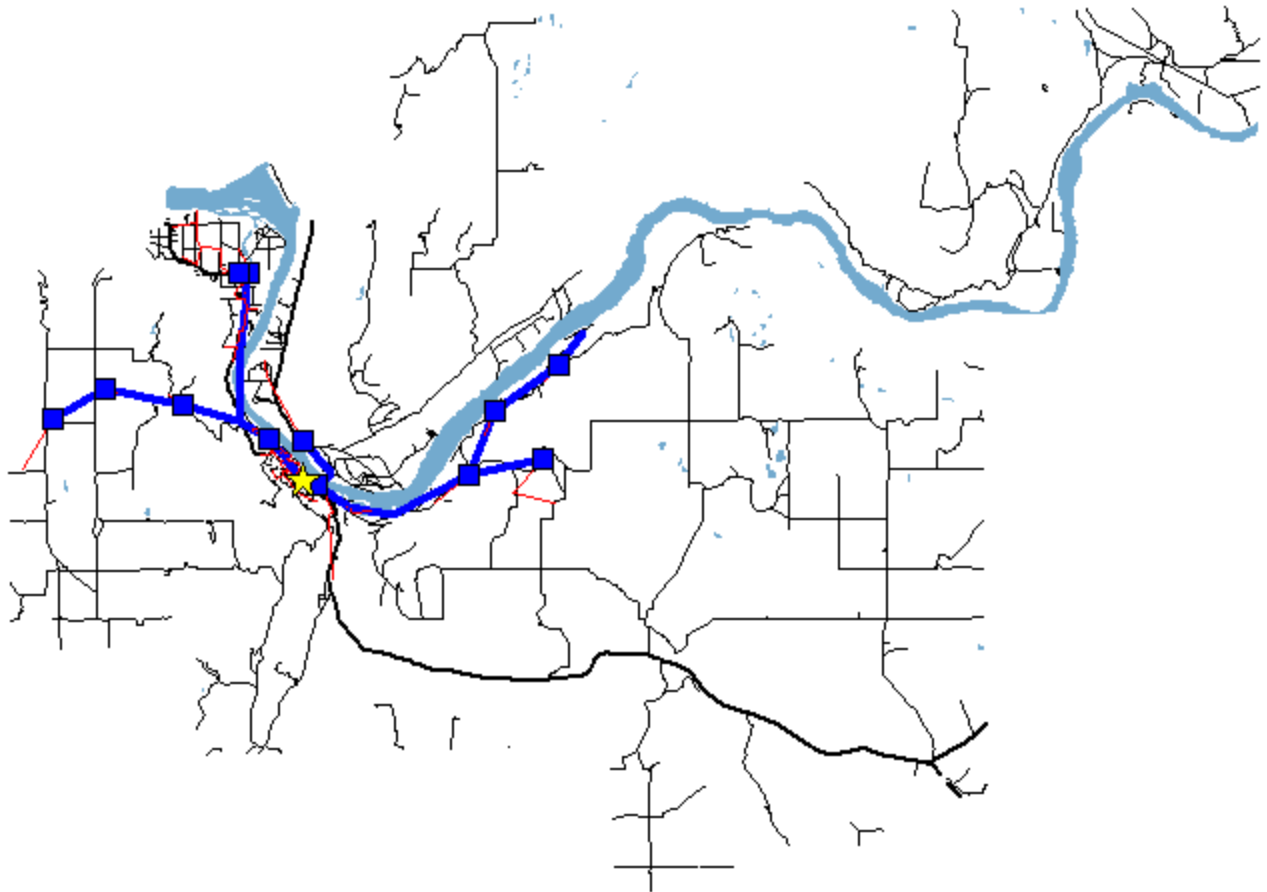
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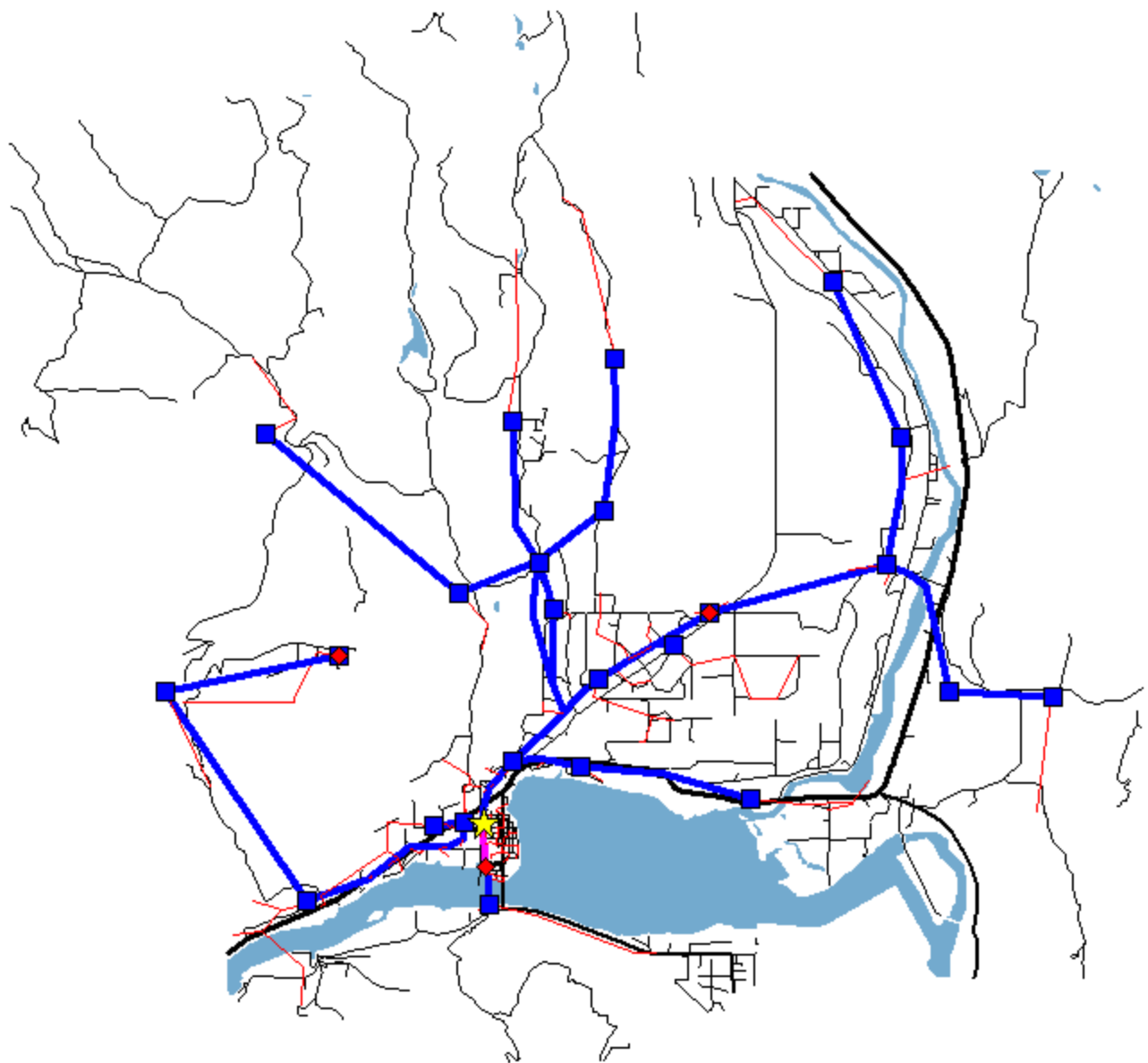
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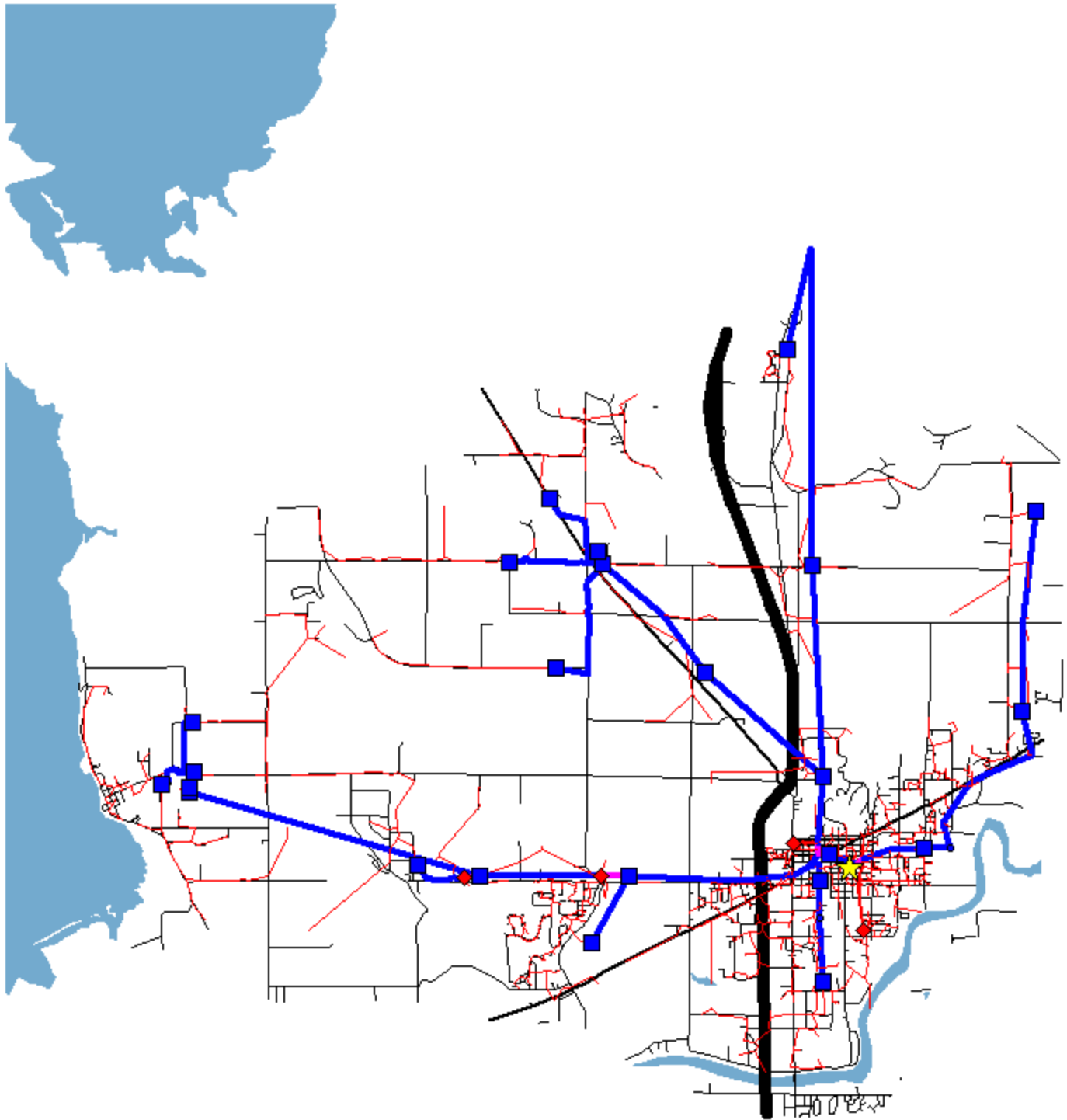
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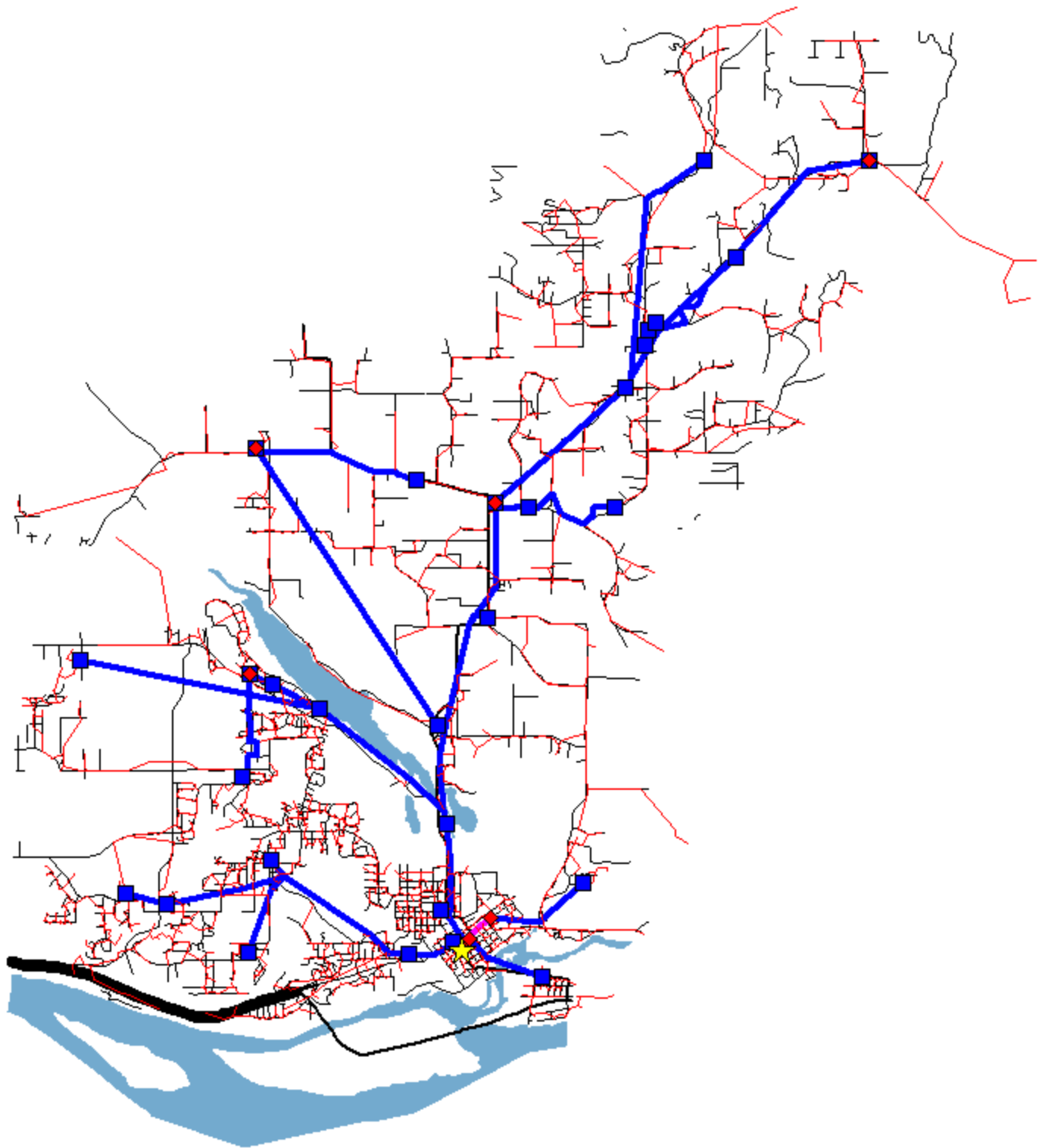
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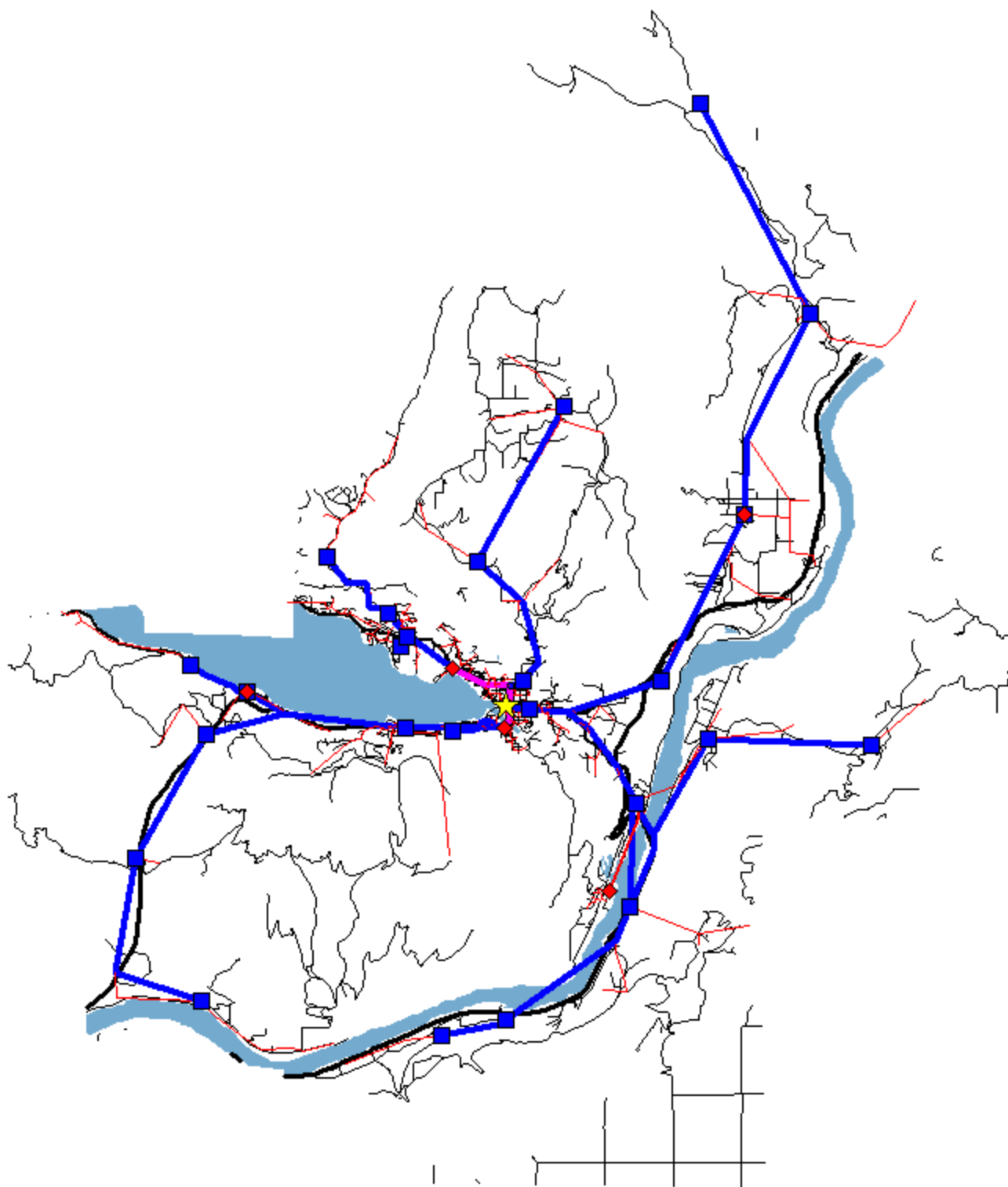
BURLWAXA: VzCost Network



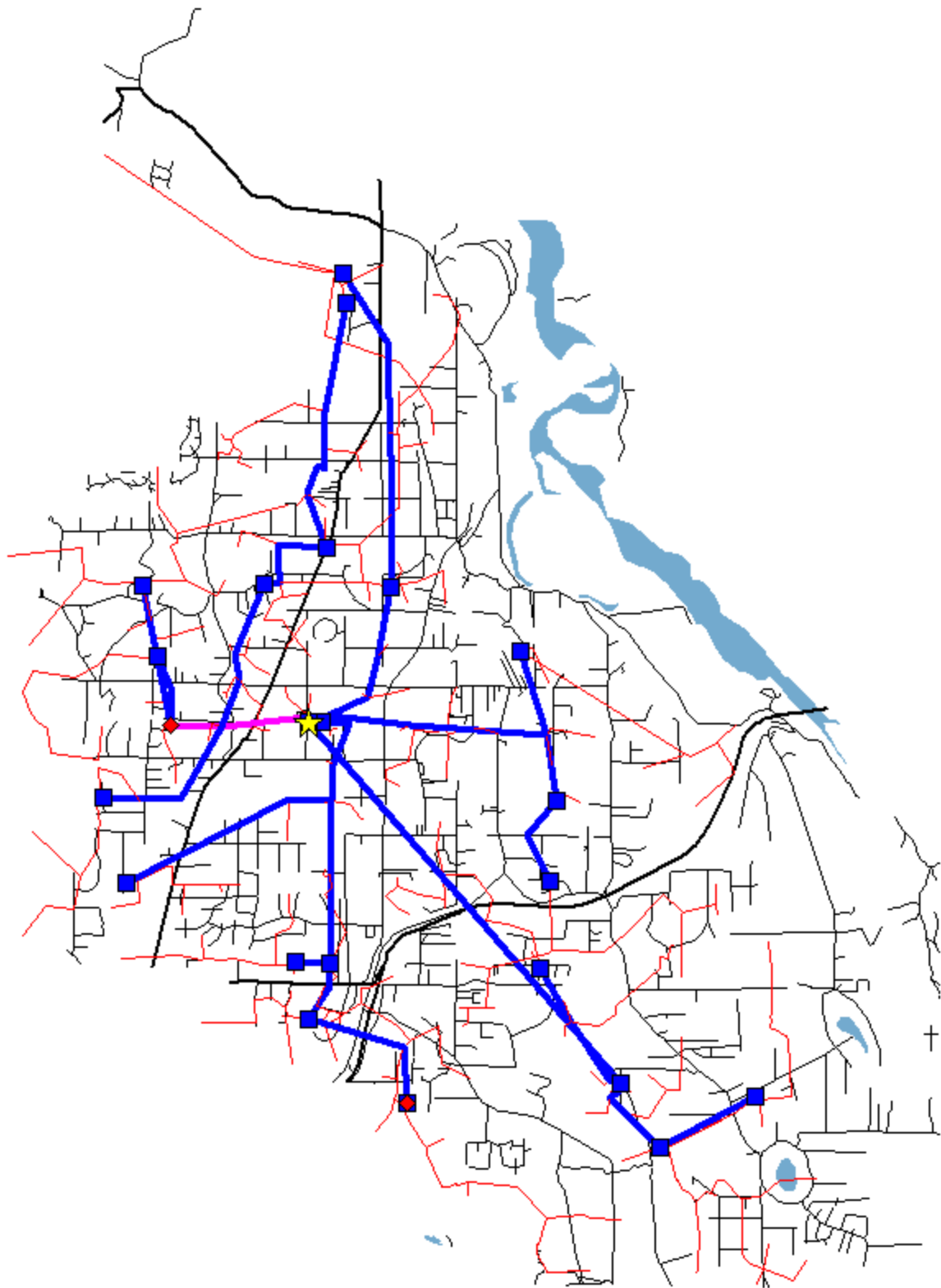
CAMSWAXX: VzCost Network



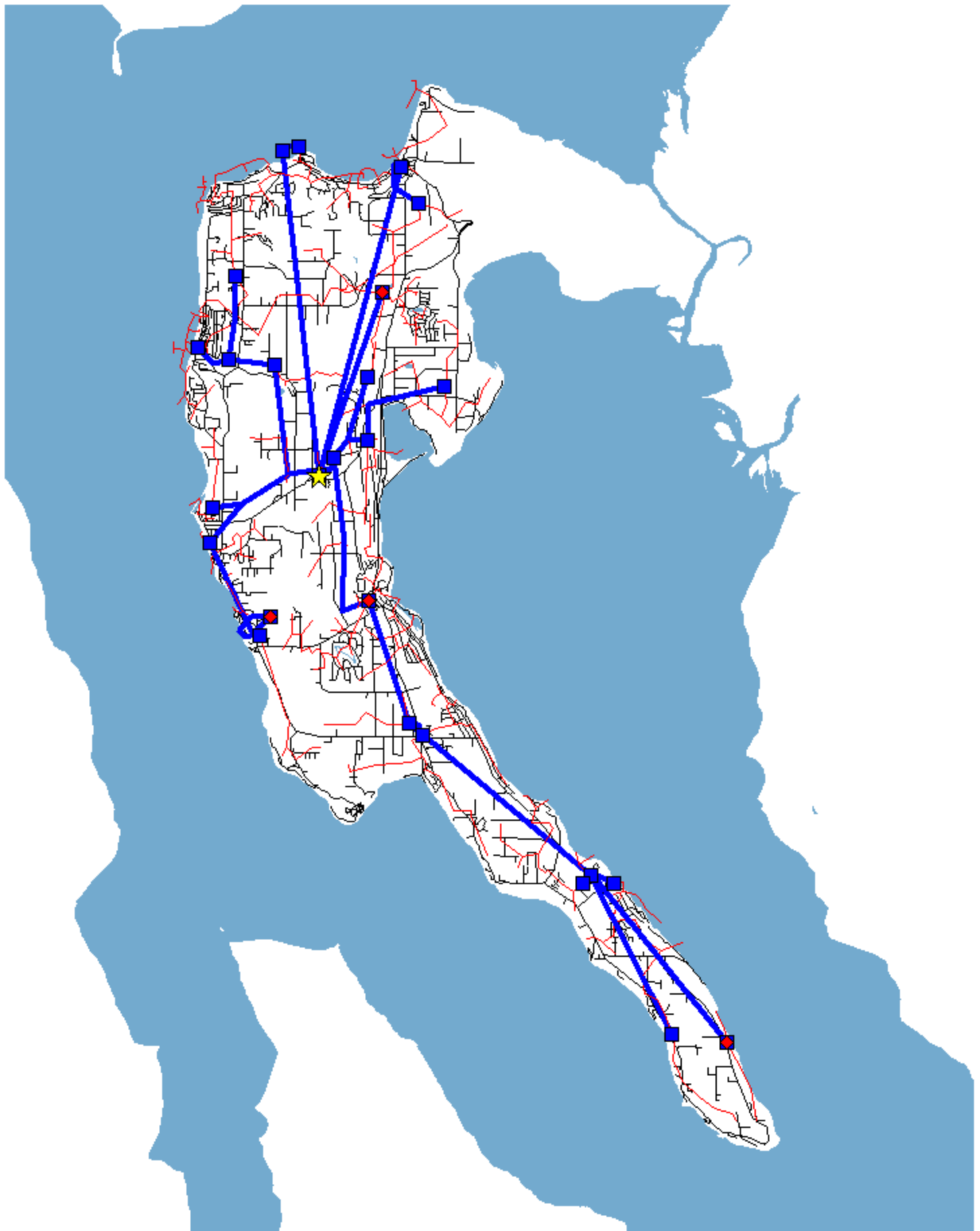
CHLNWAXX: VzCost Network



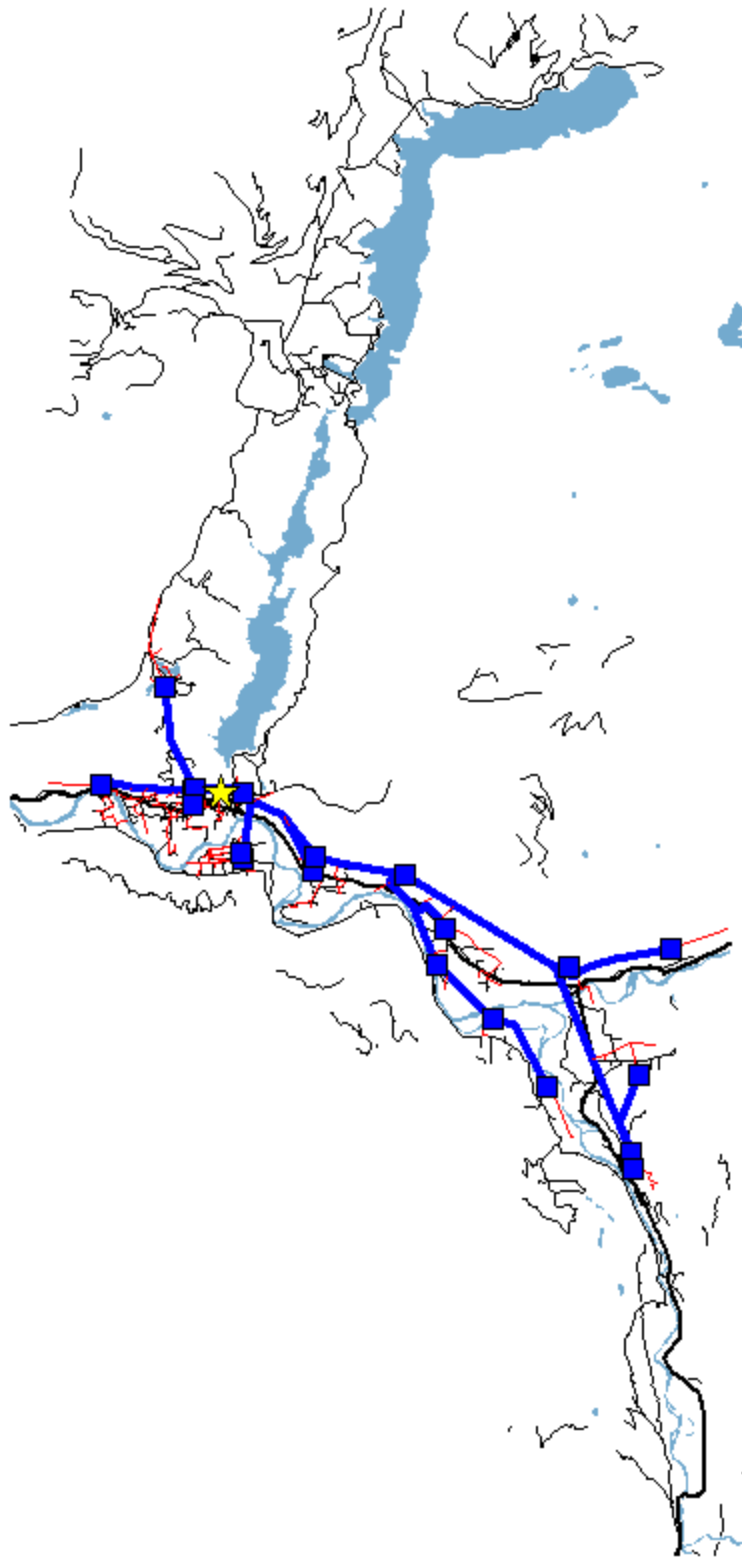
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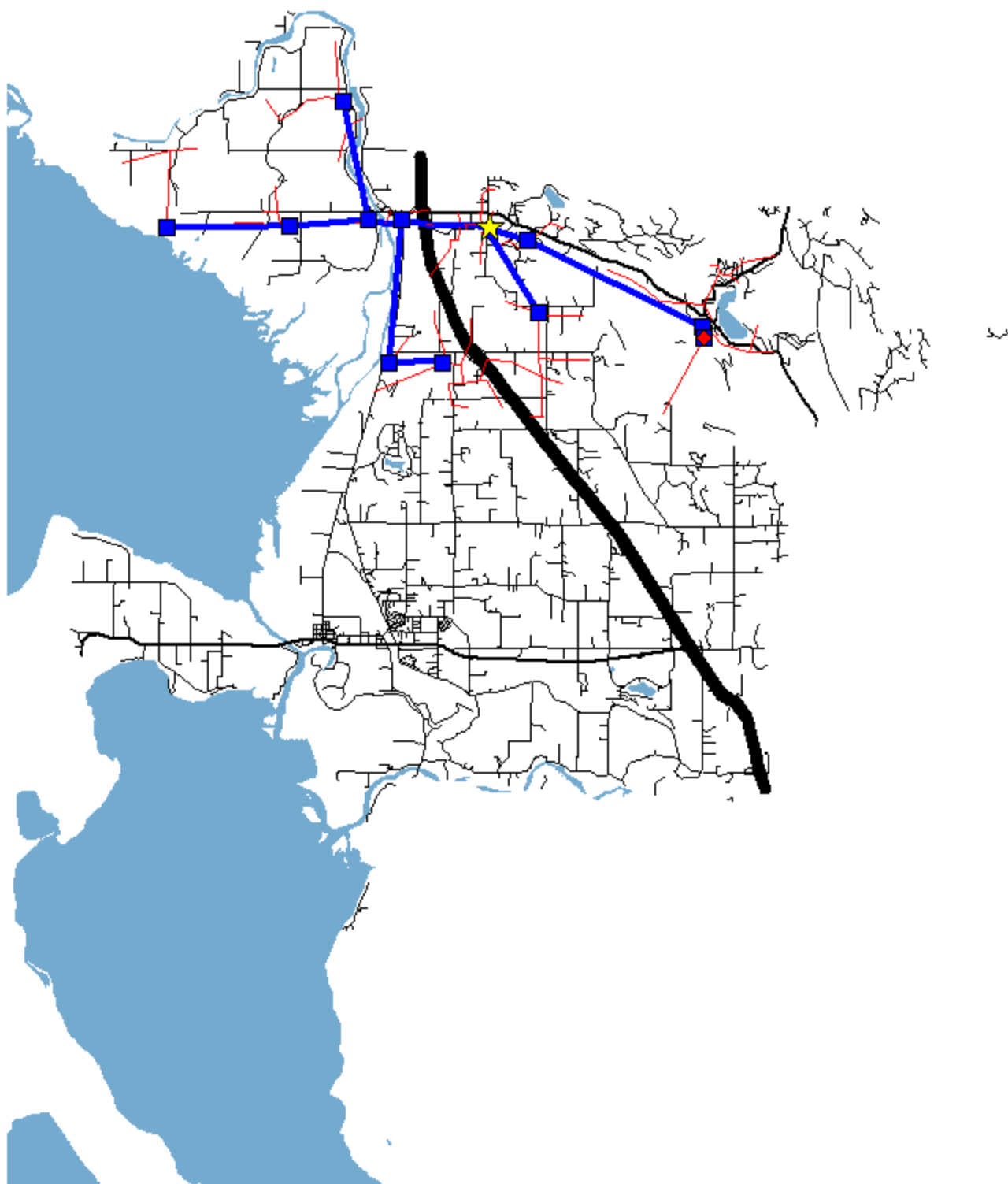
CMISWAXA: VzCost Network



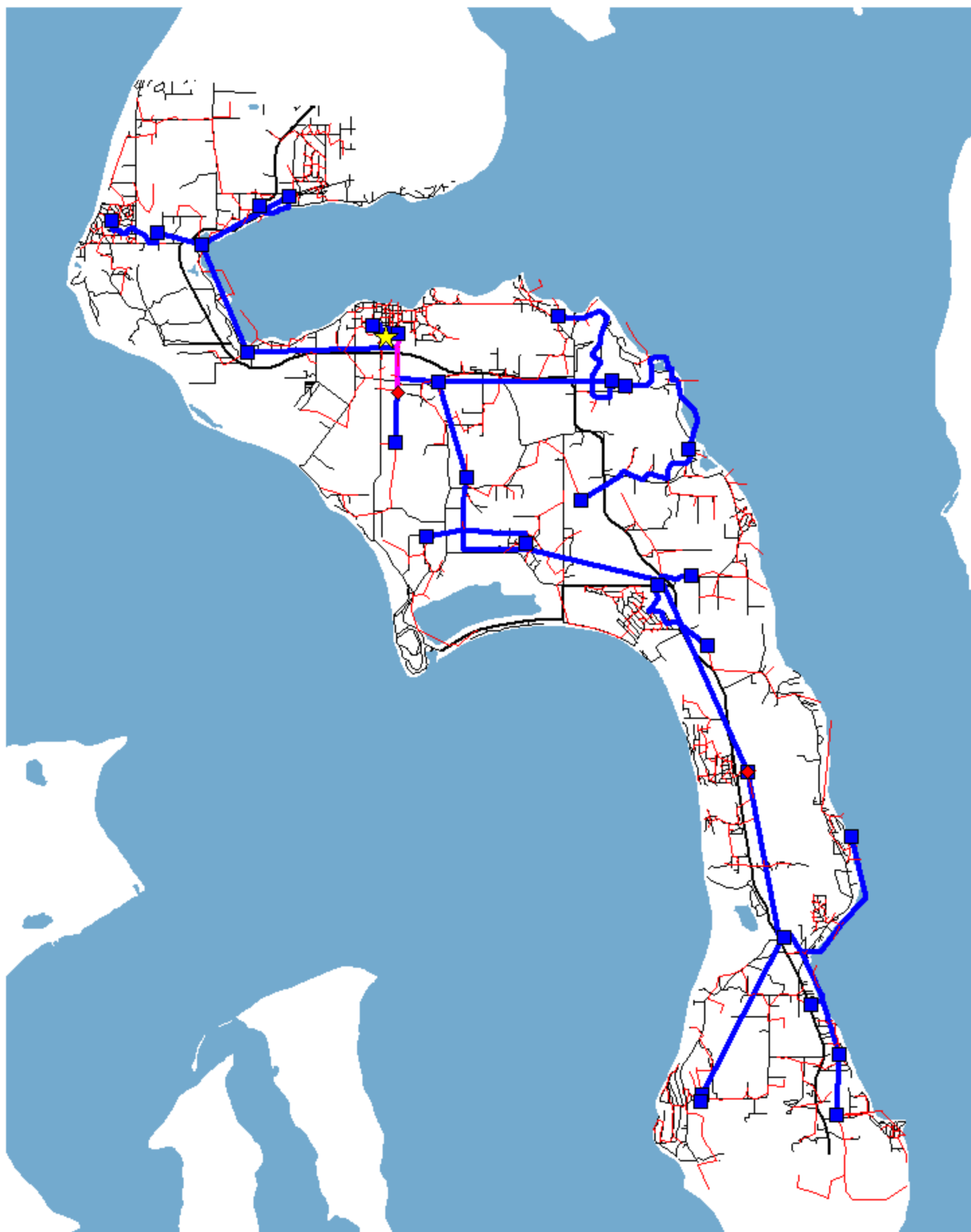
CNCRWAXX: VzCost Network



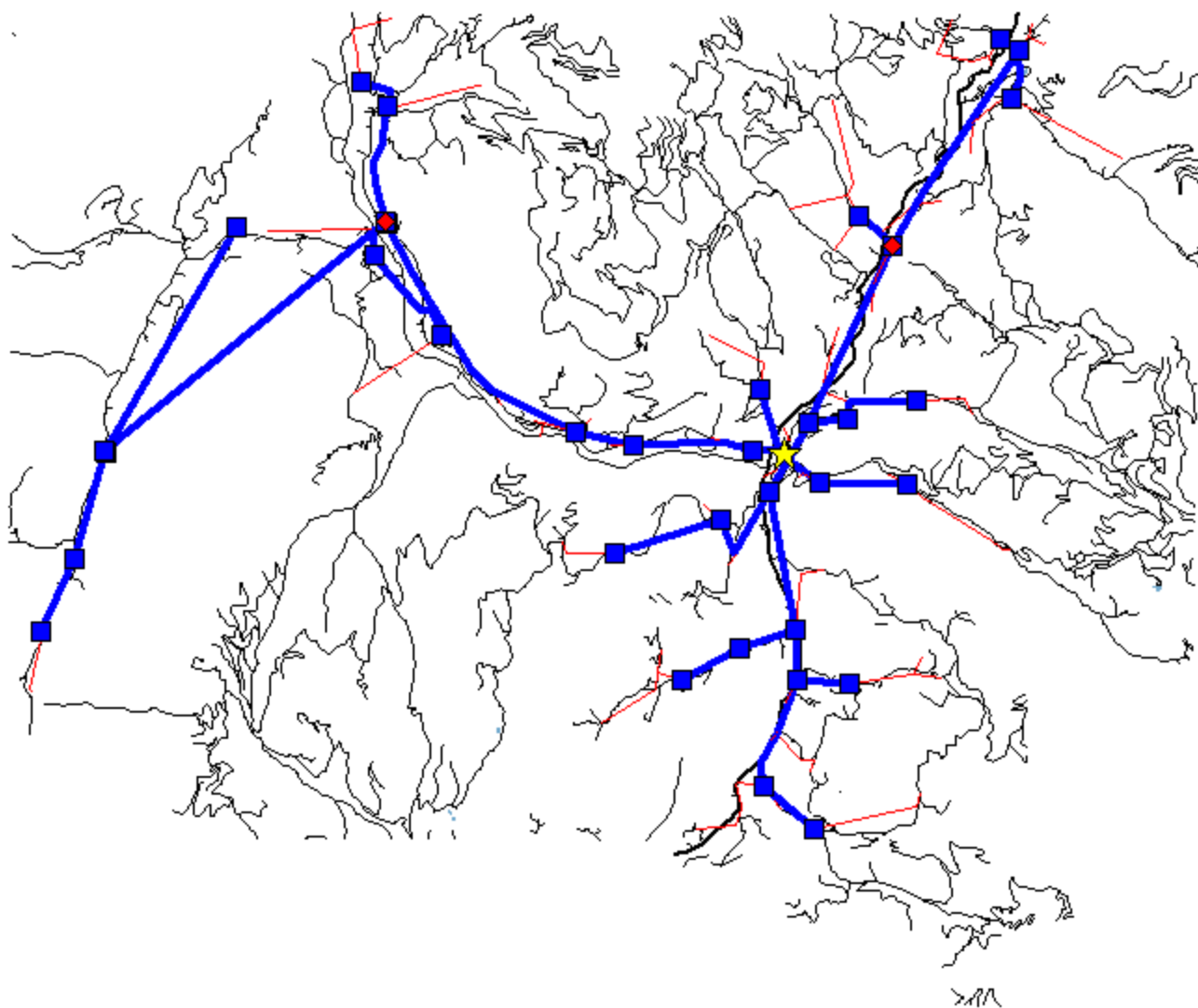
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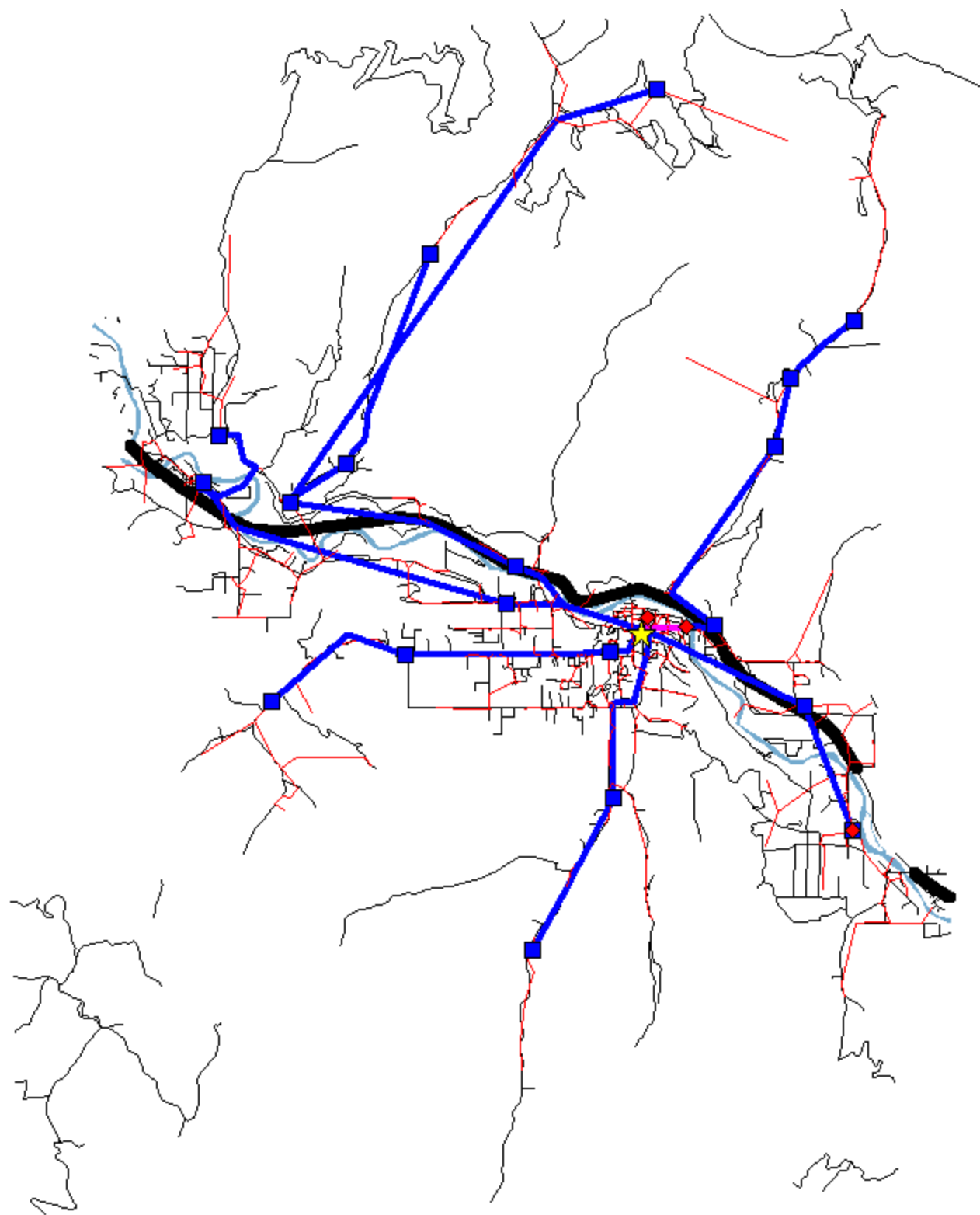
CPVLWAXX: VzCost Network



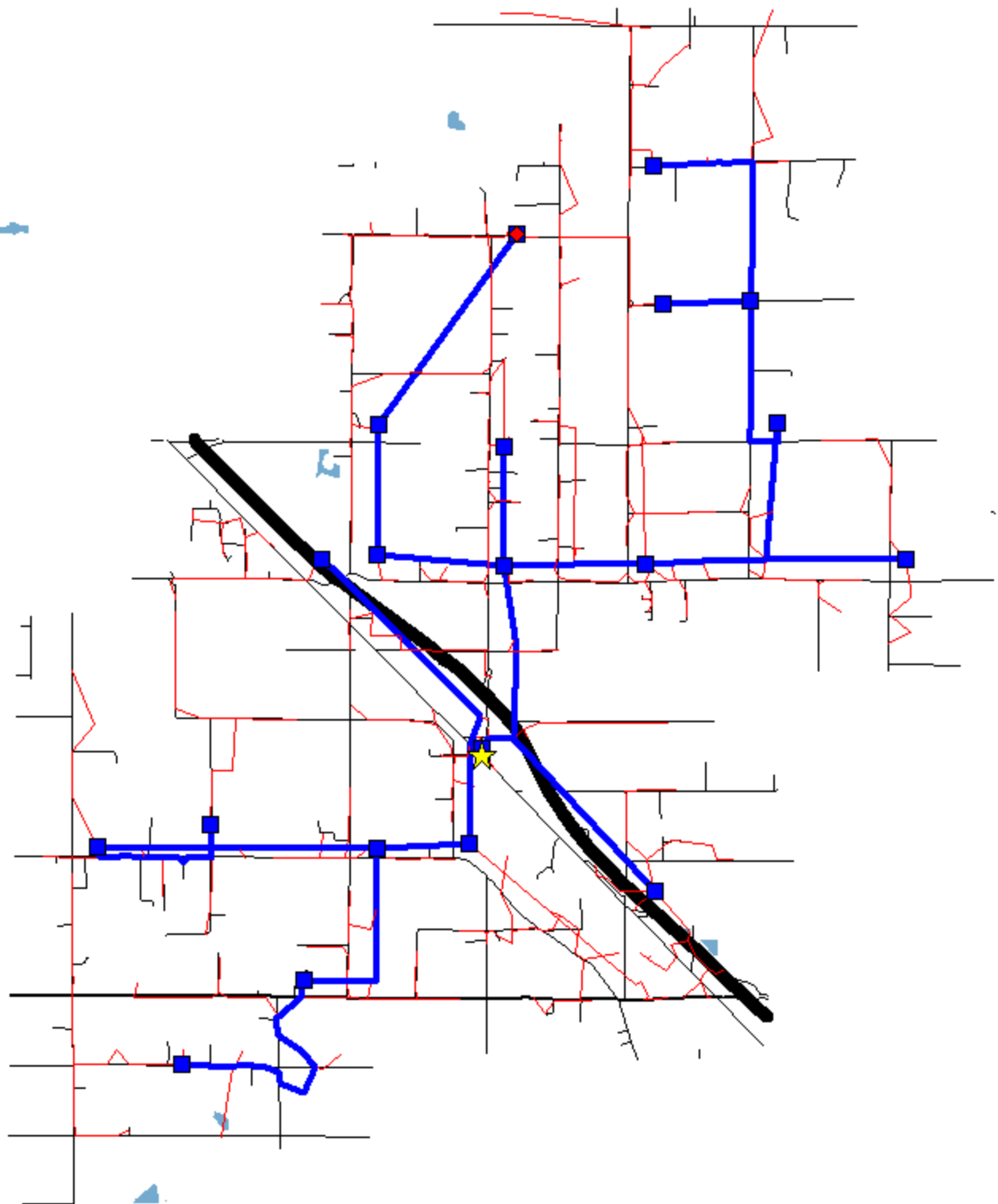
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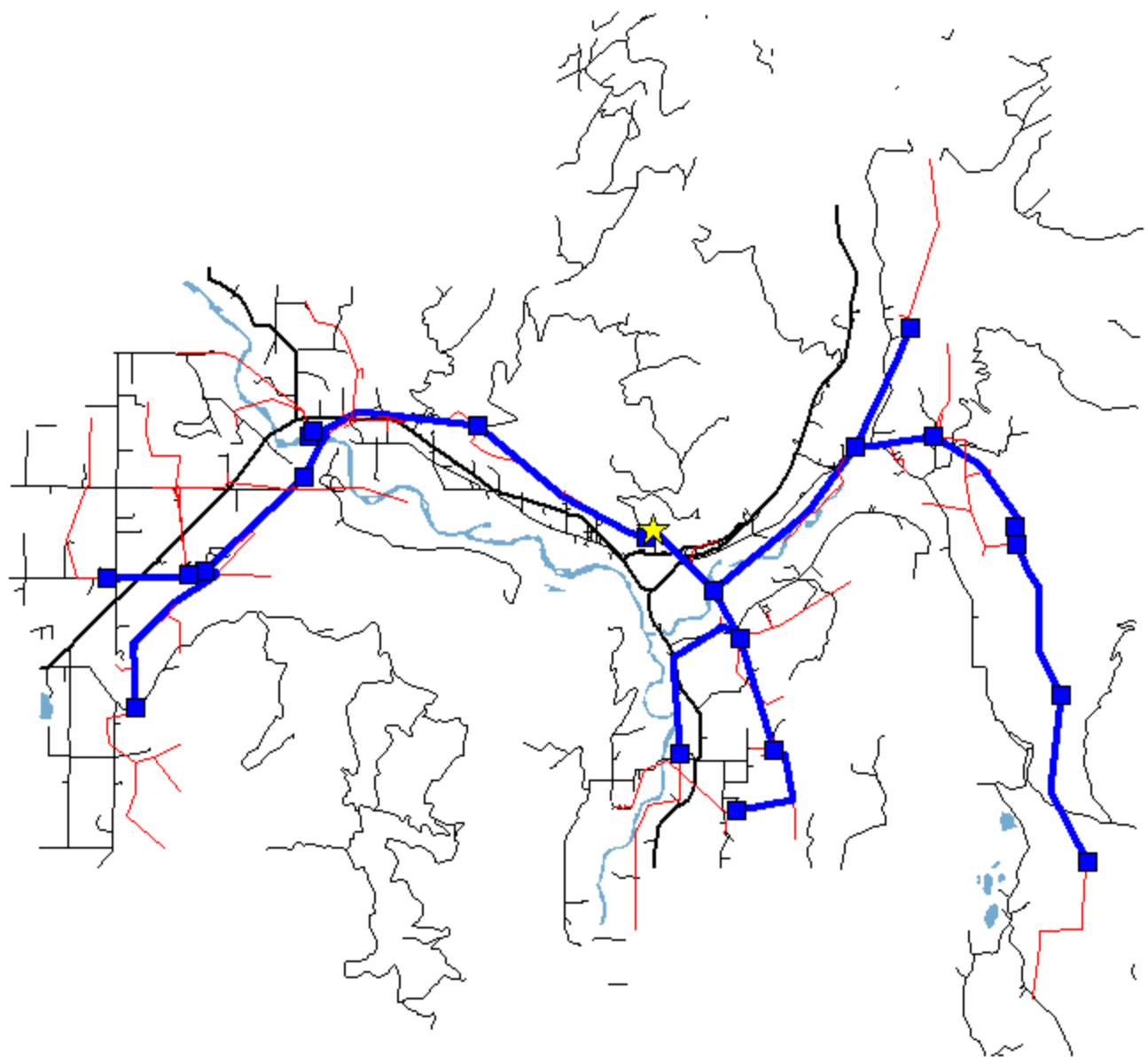
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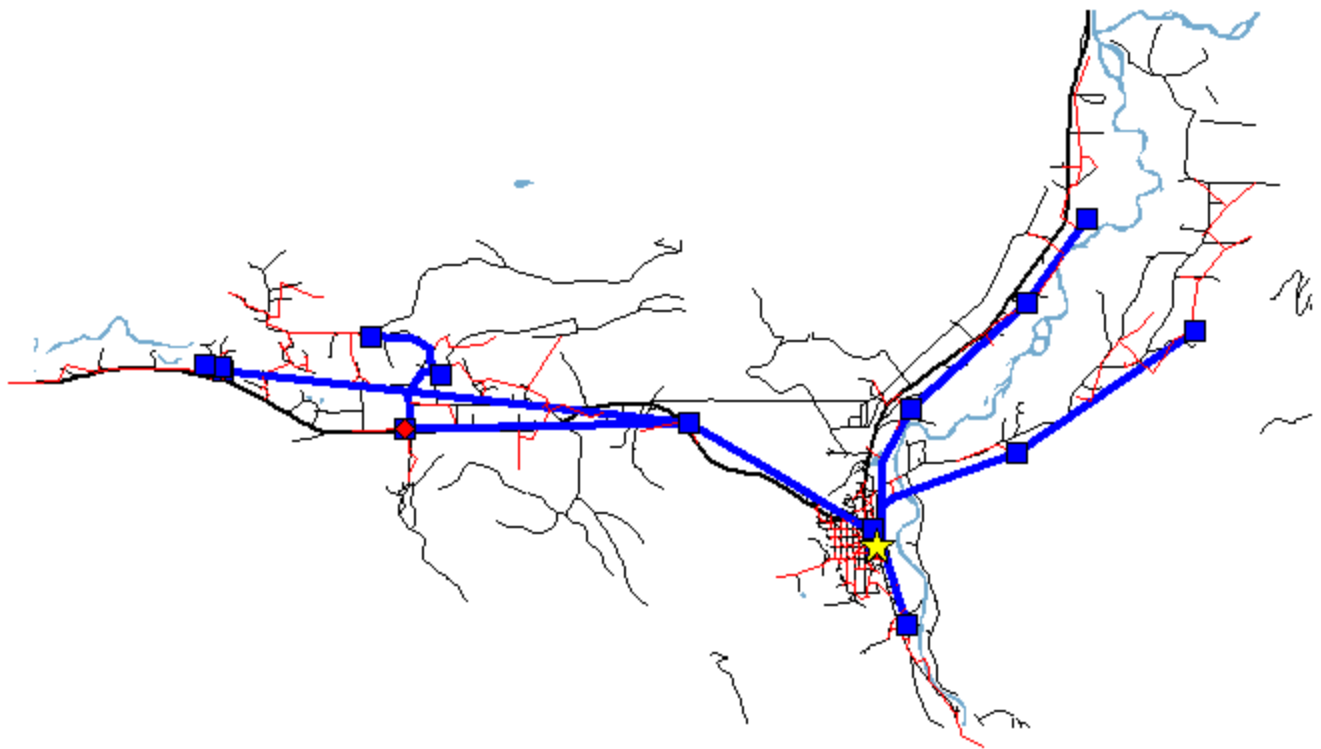
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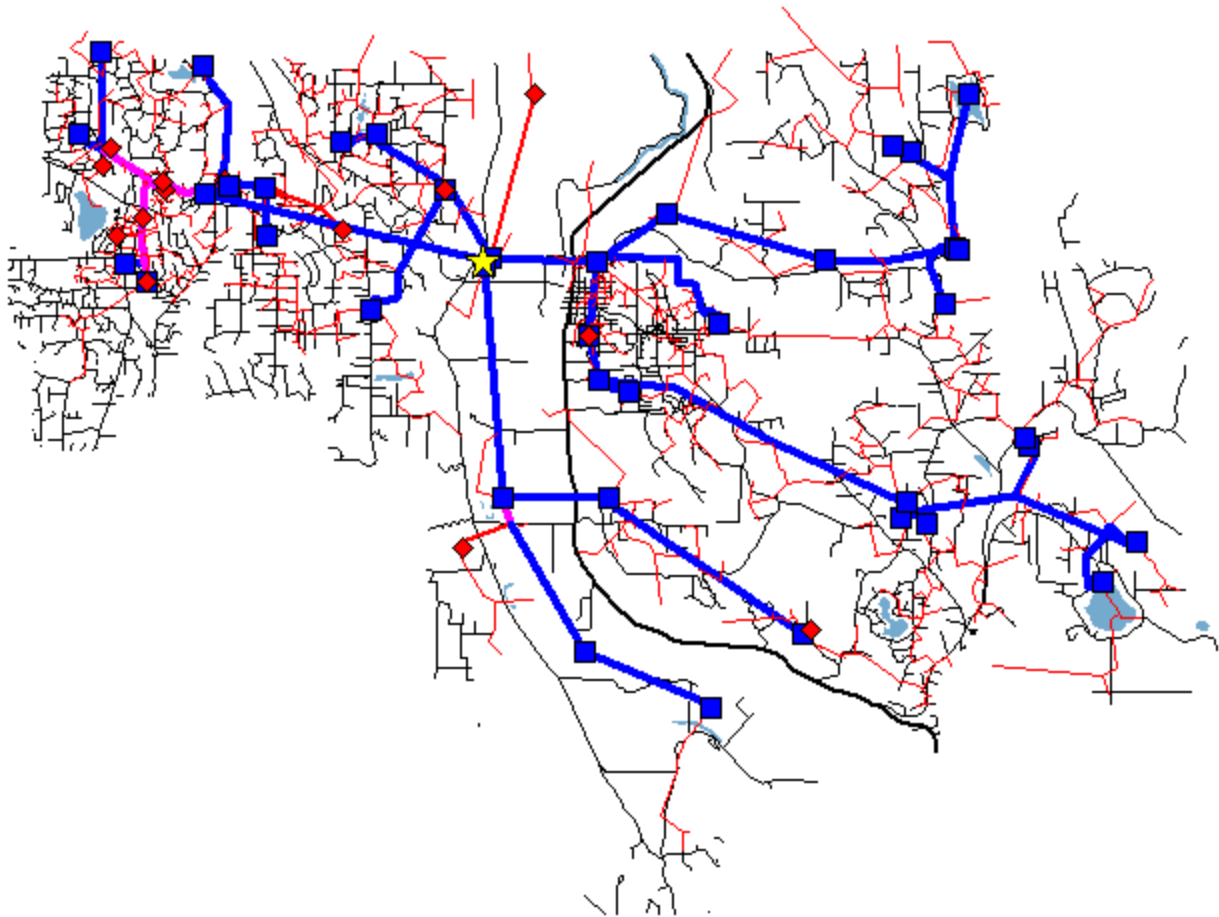
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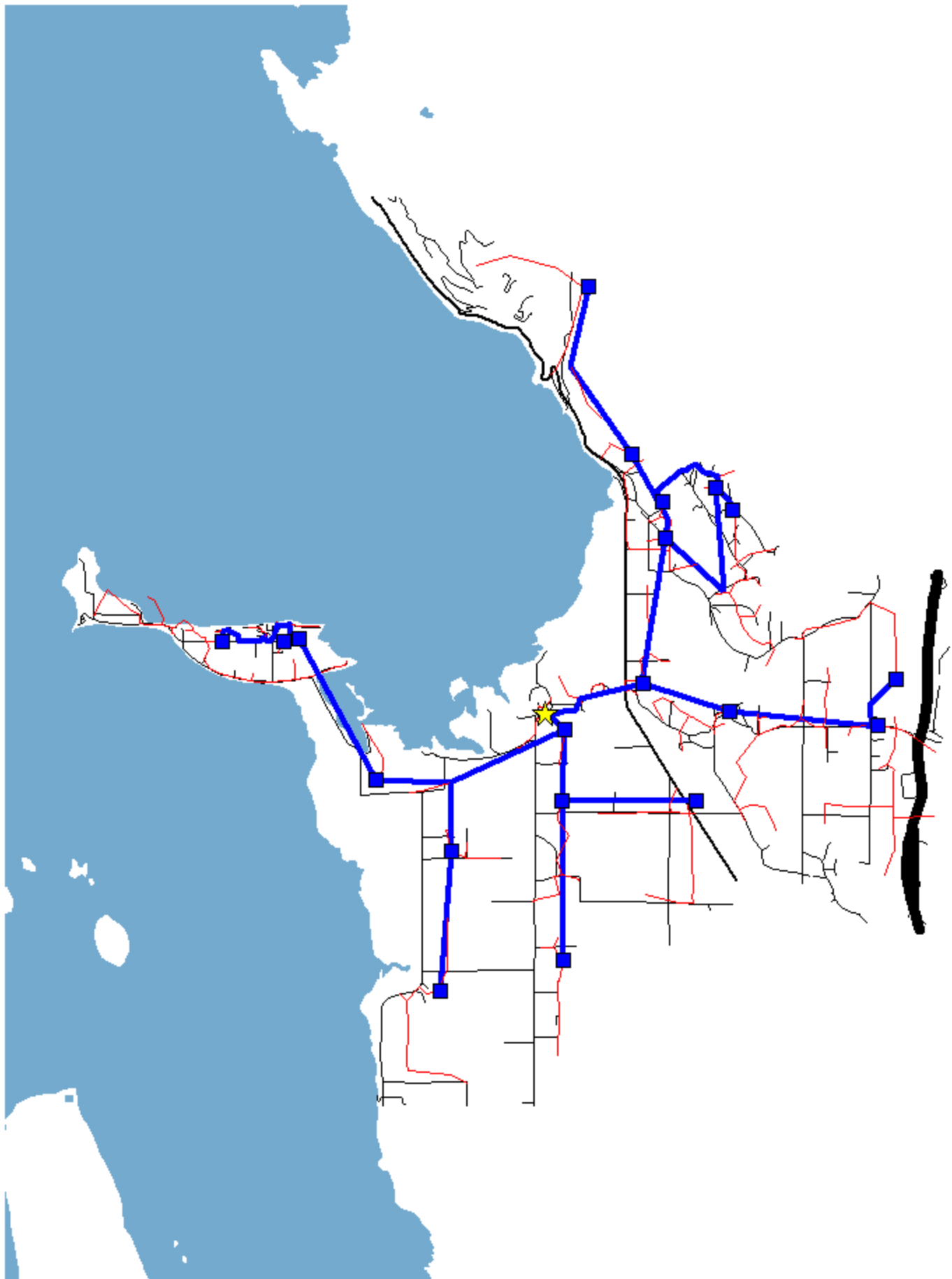
DRTNWAXX: VzCost Network



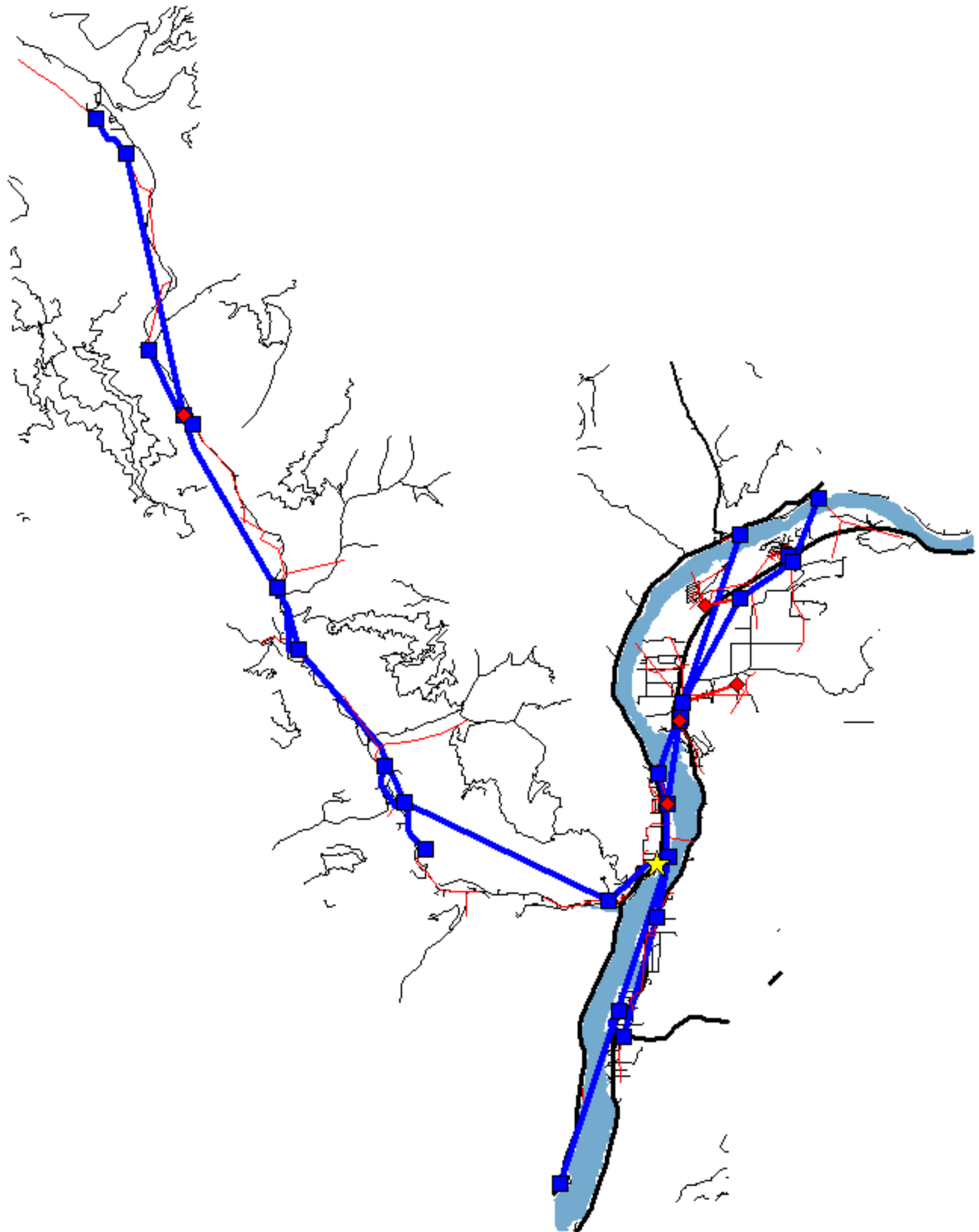
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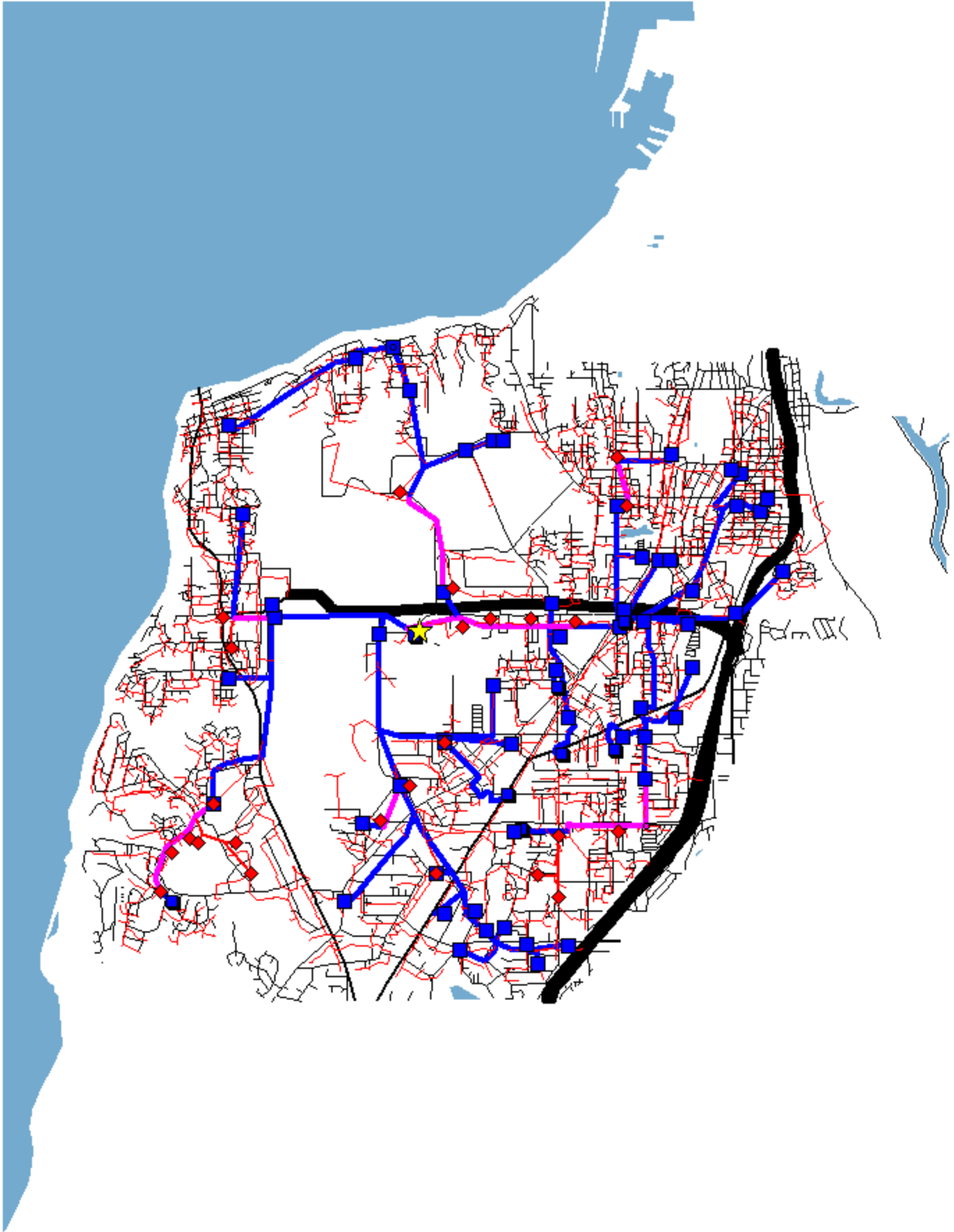
EDSNWAXX: VzCost Network



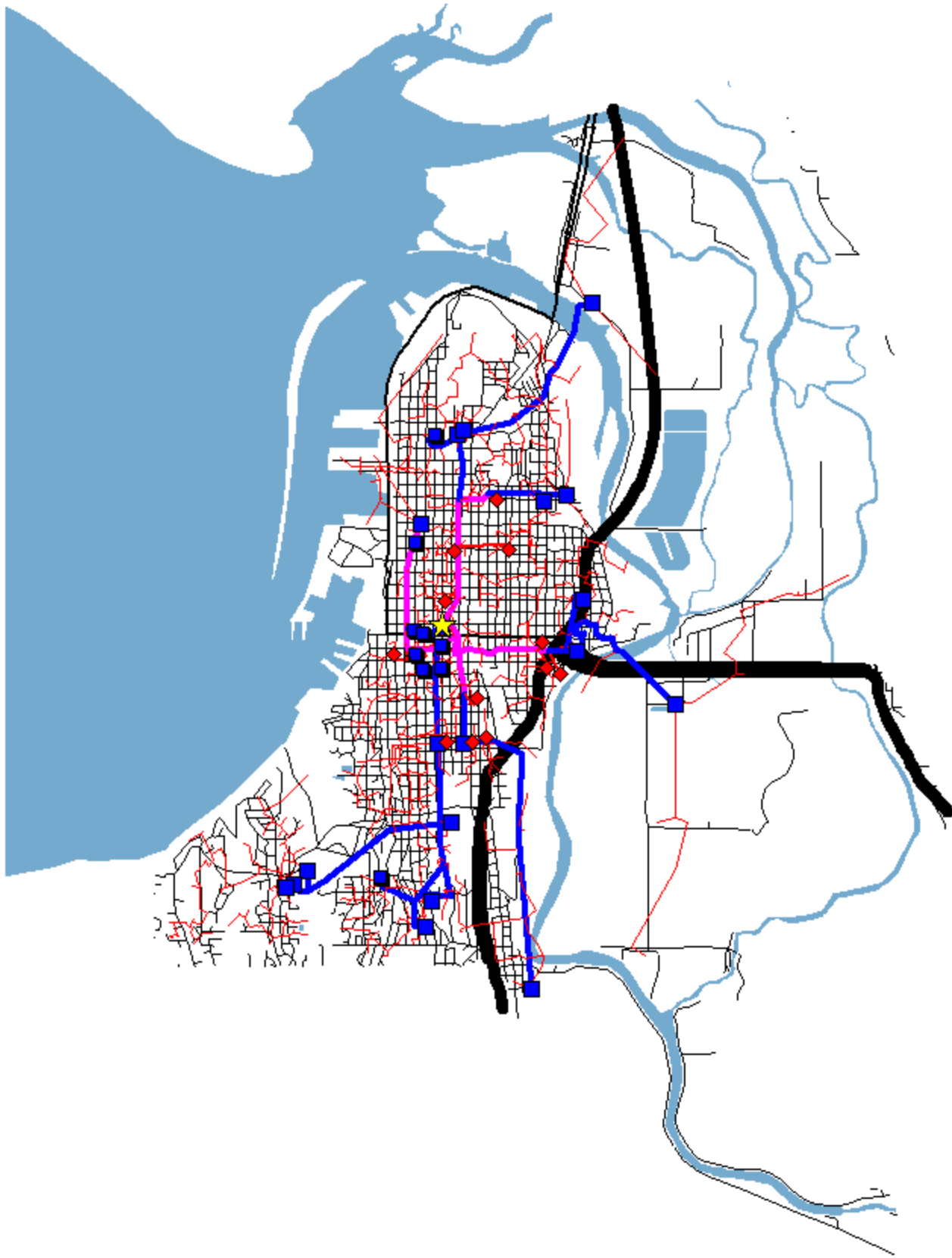
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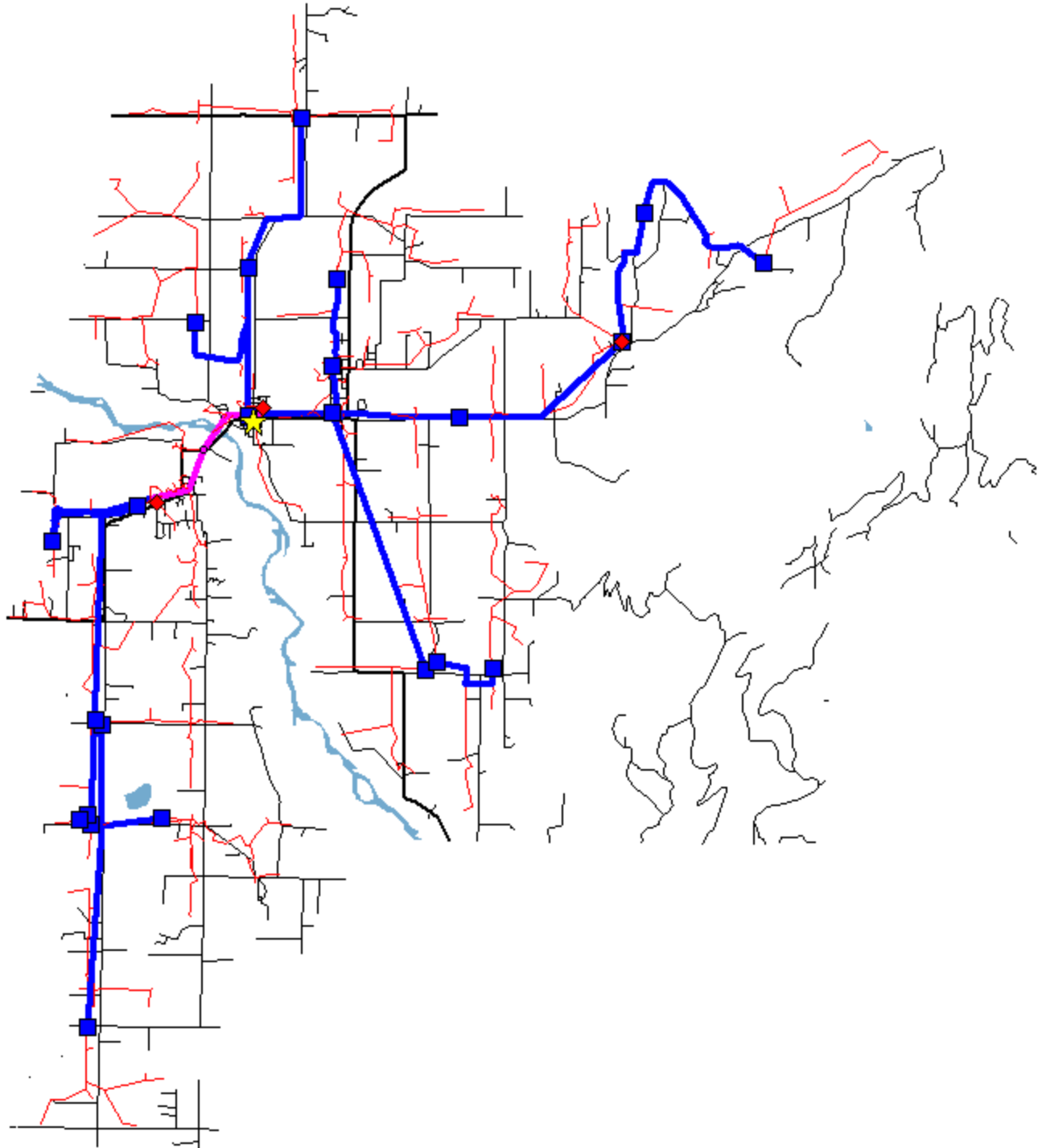
EVRTWAXC: VzCost Network



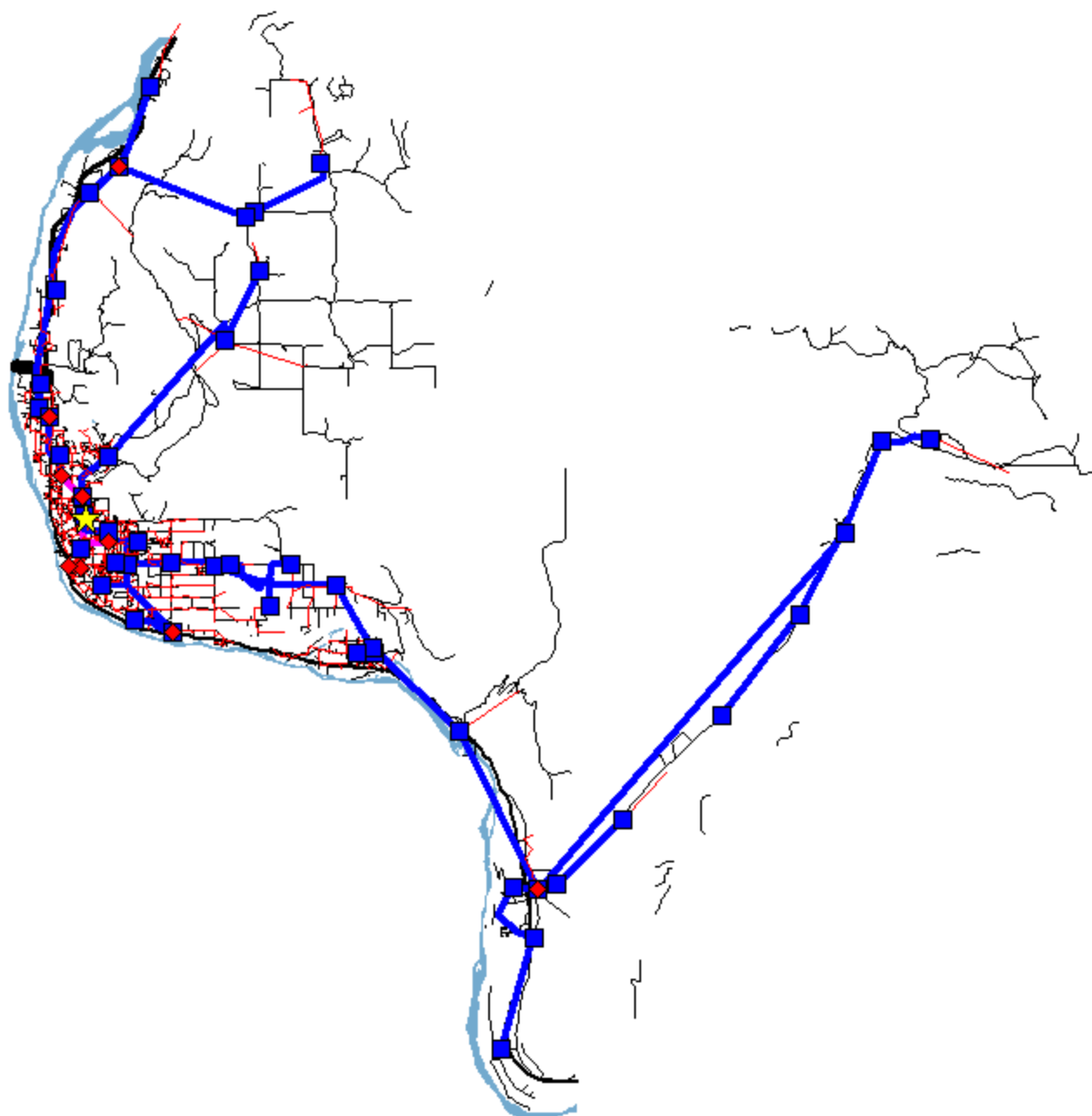
EVRTWAXF: VzCost Network



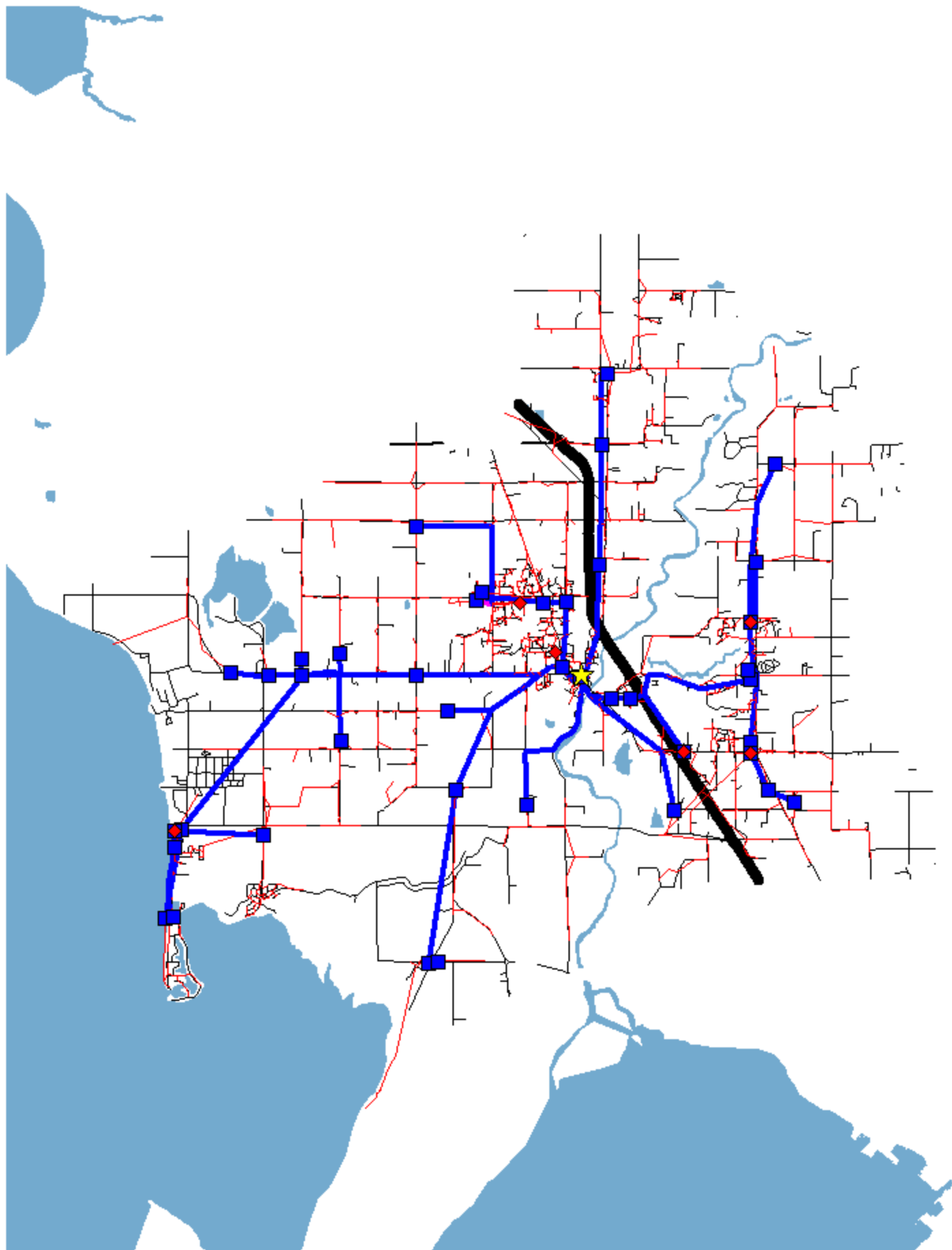
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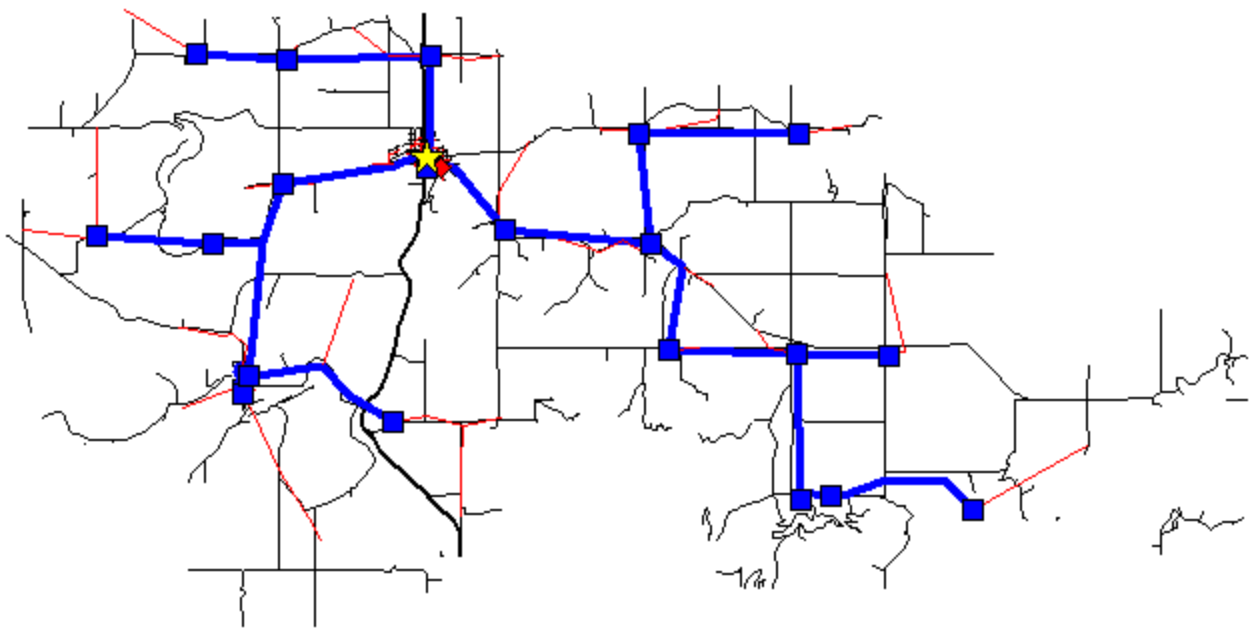
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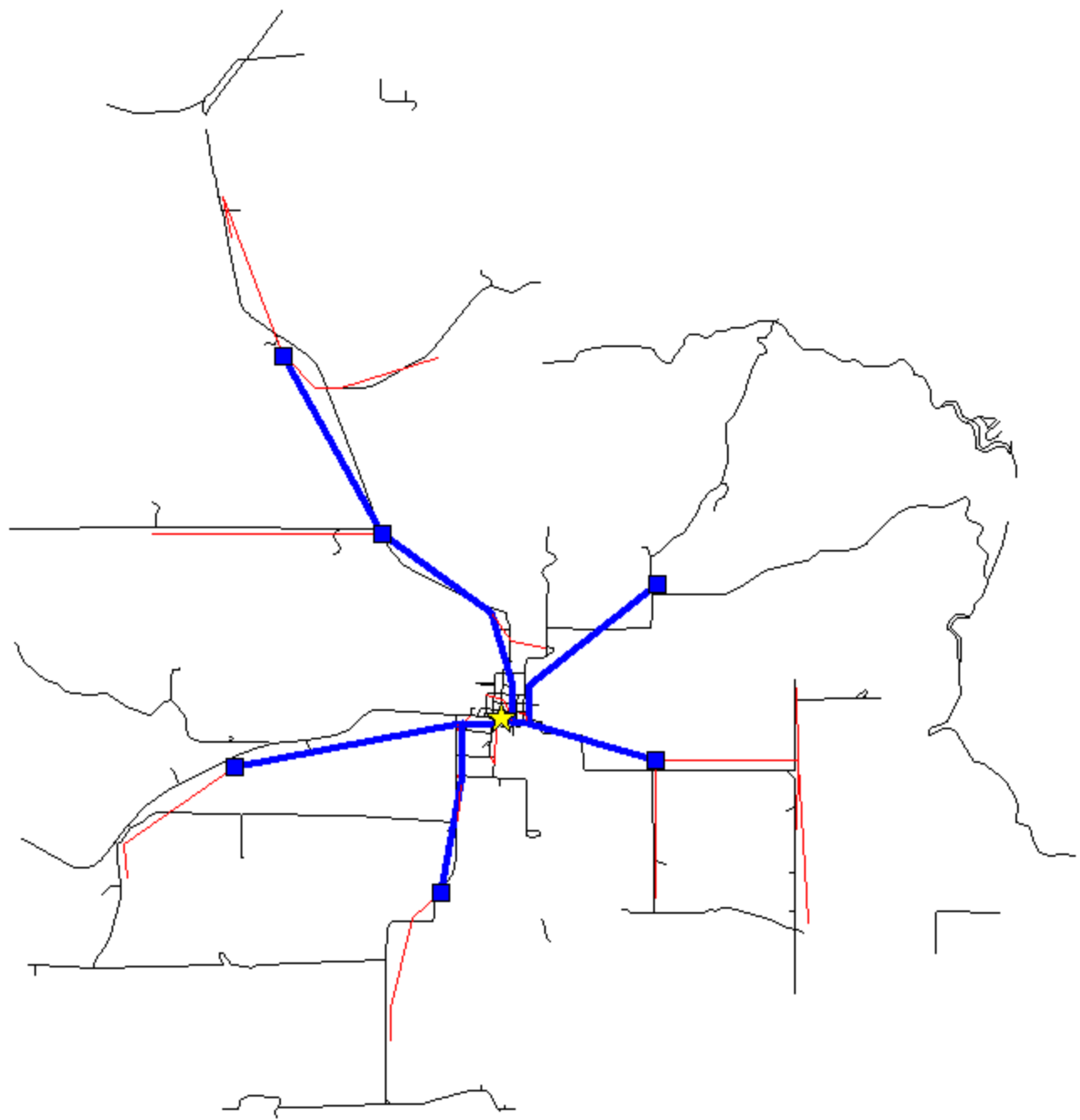
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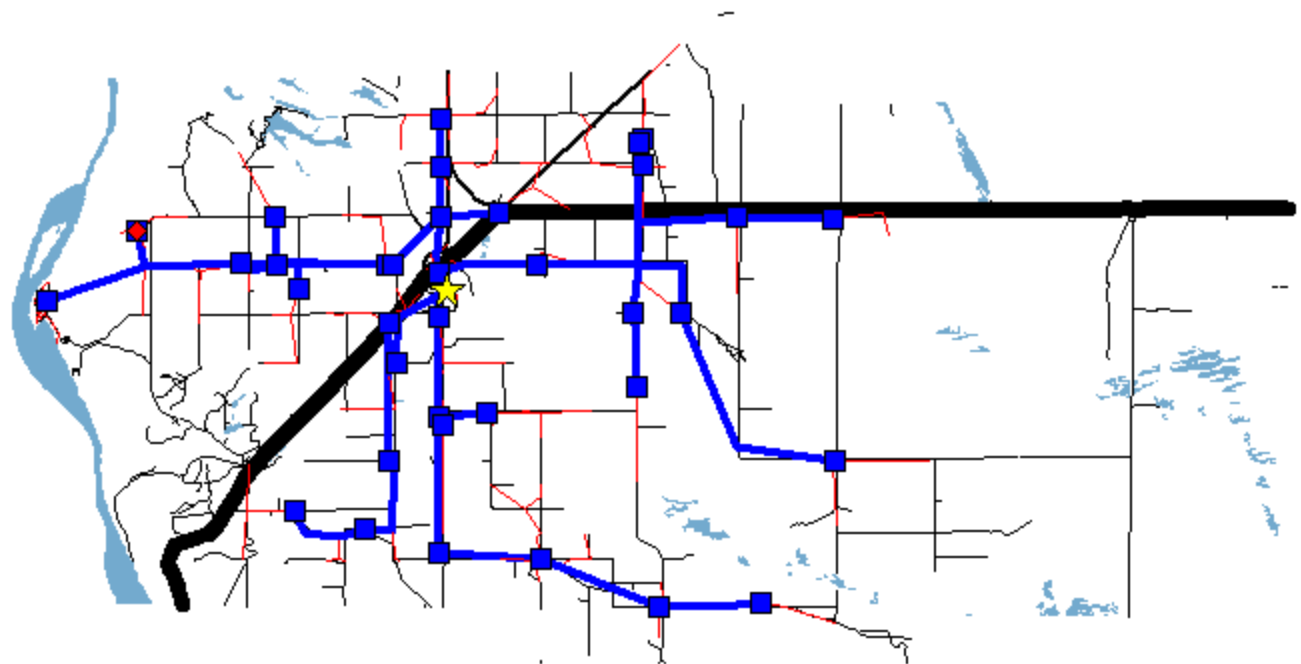
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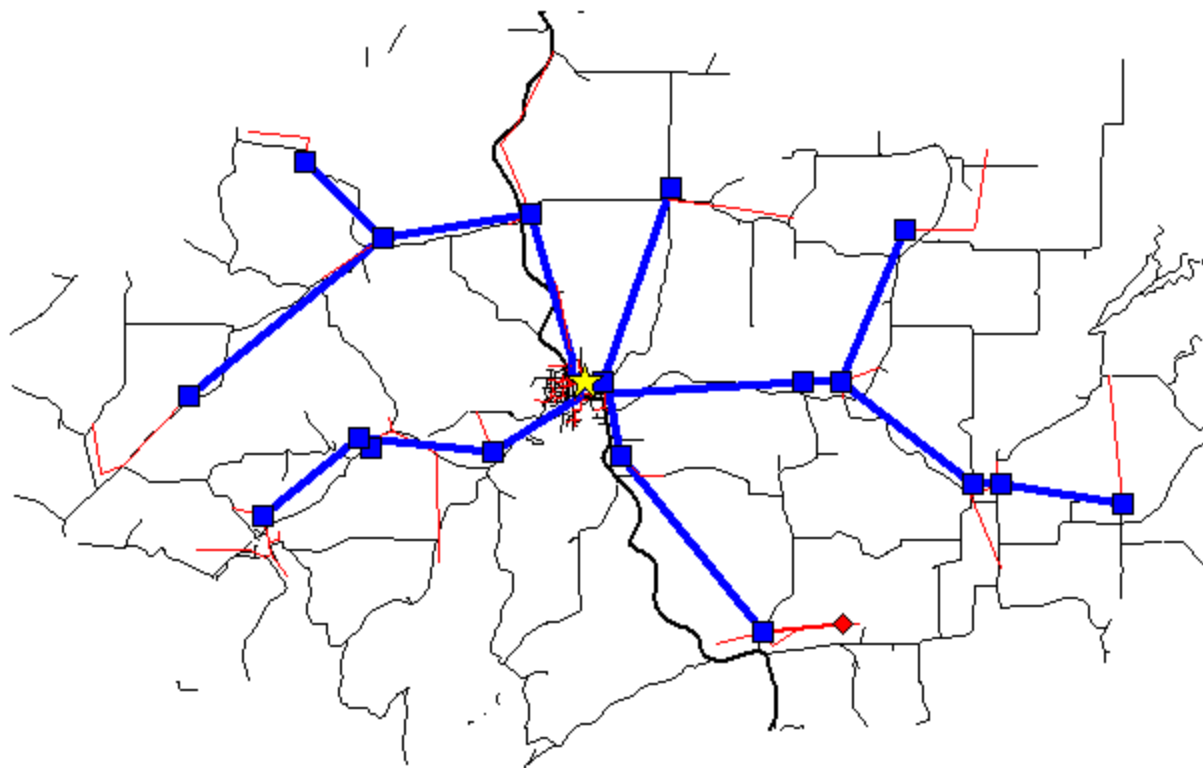
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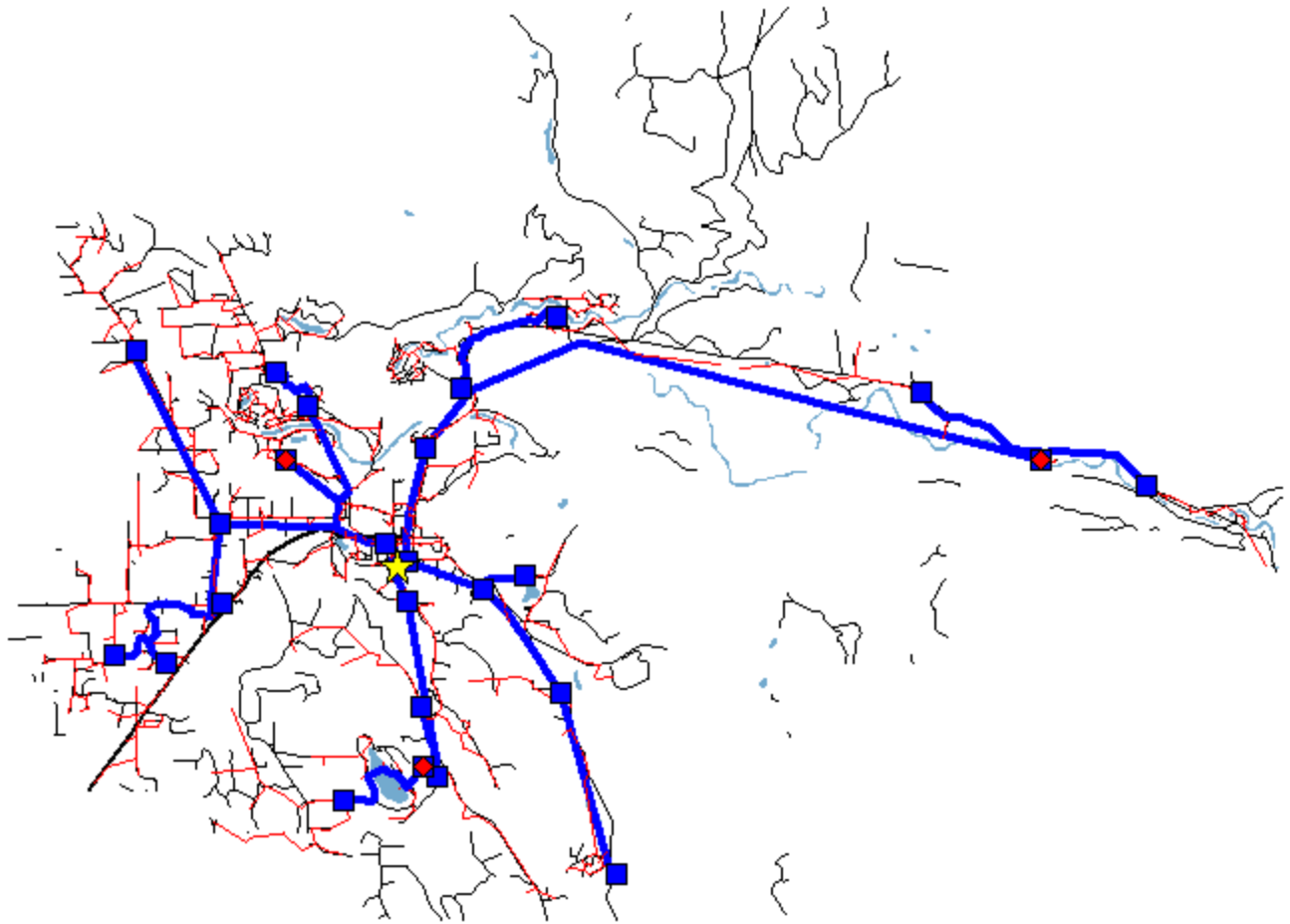
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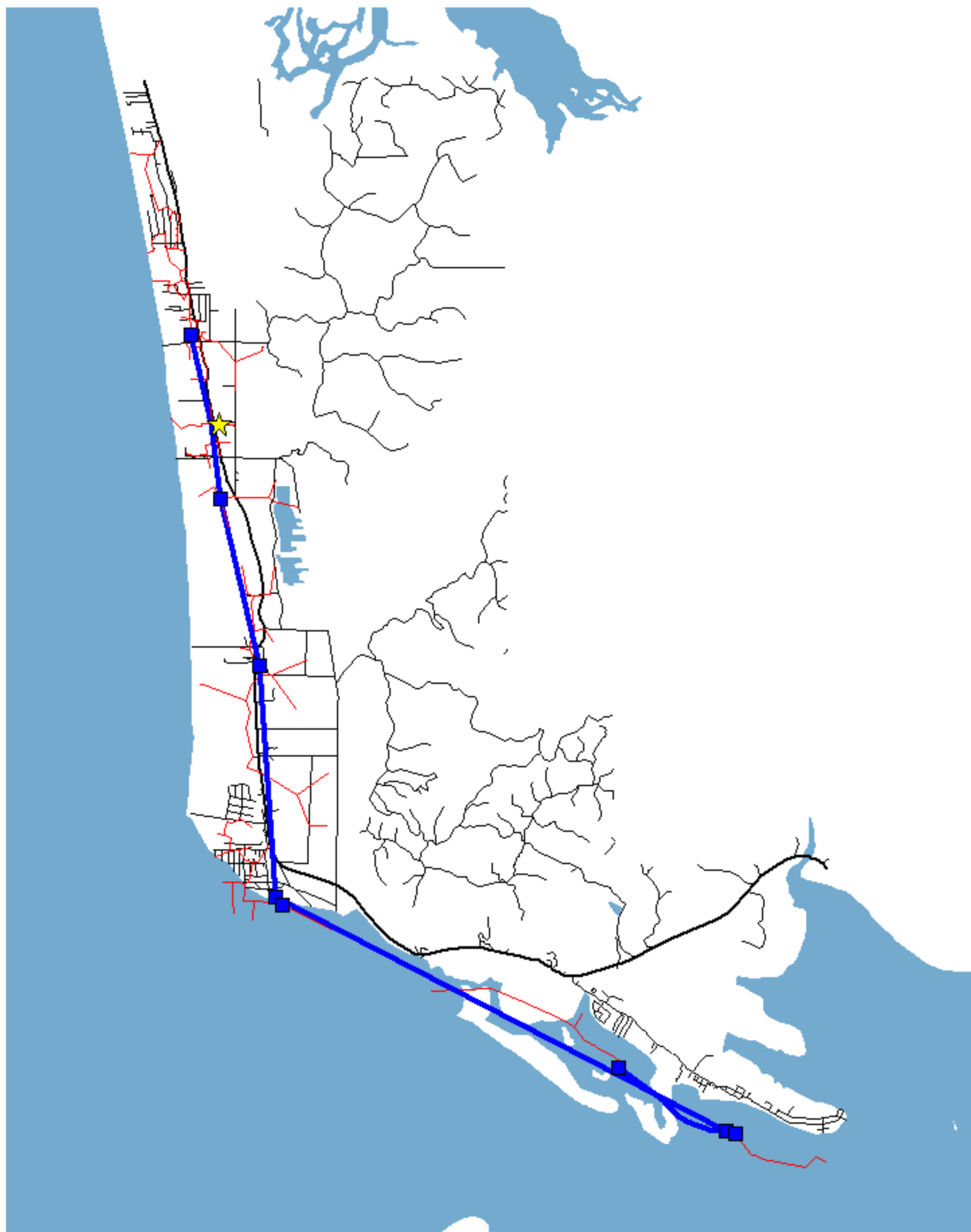
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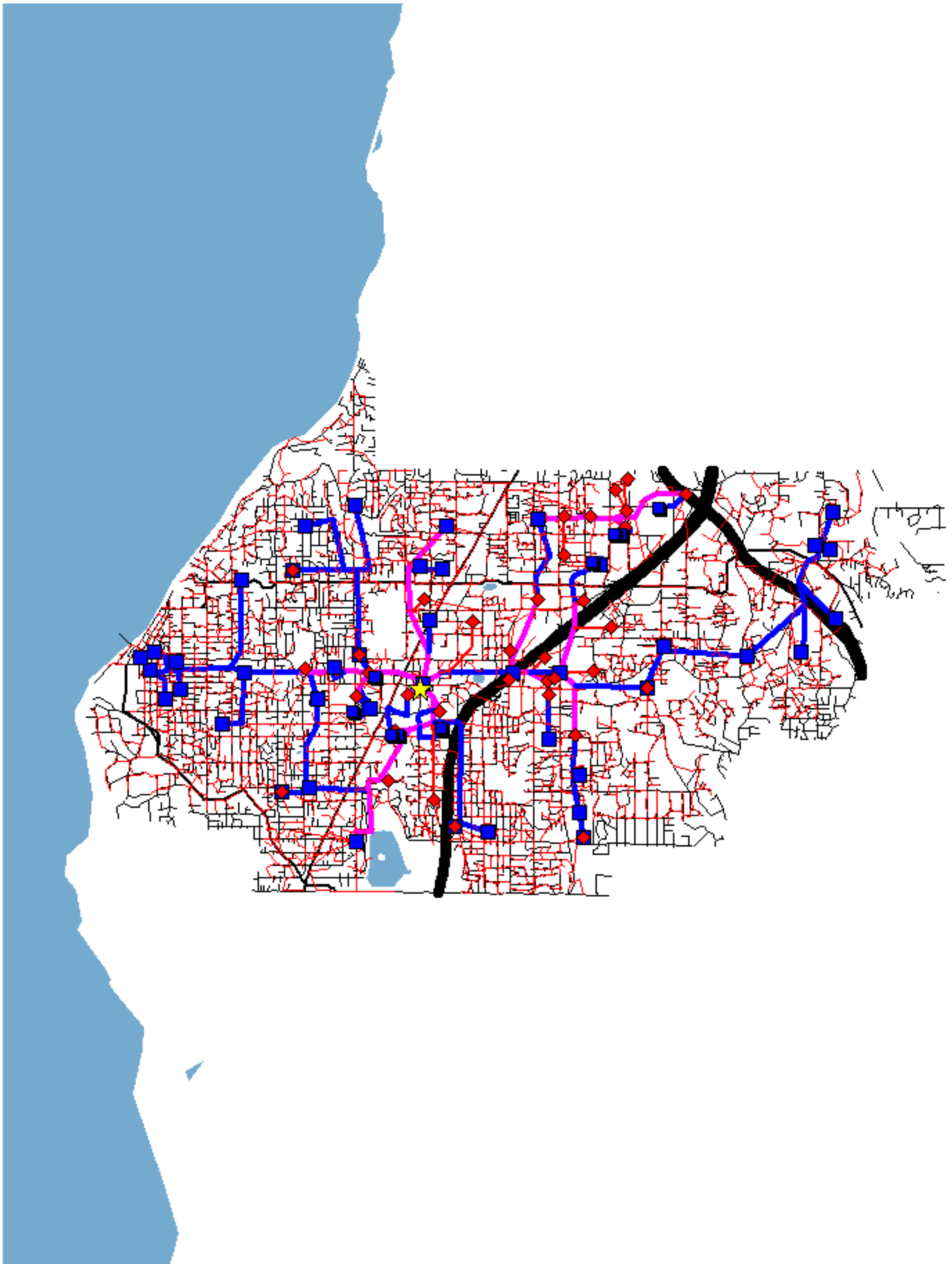
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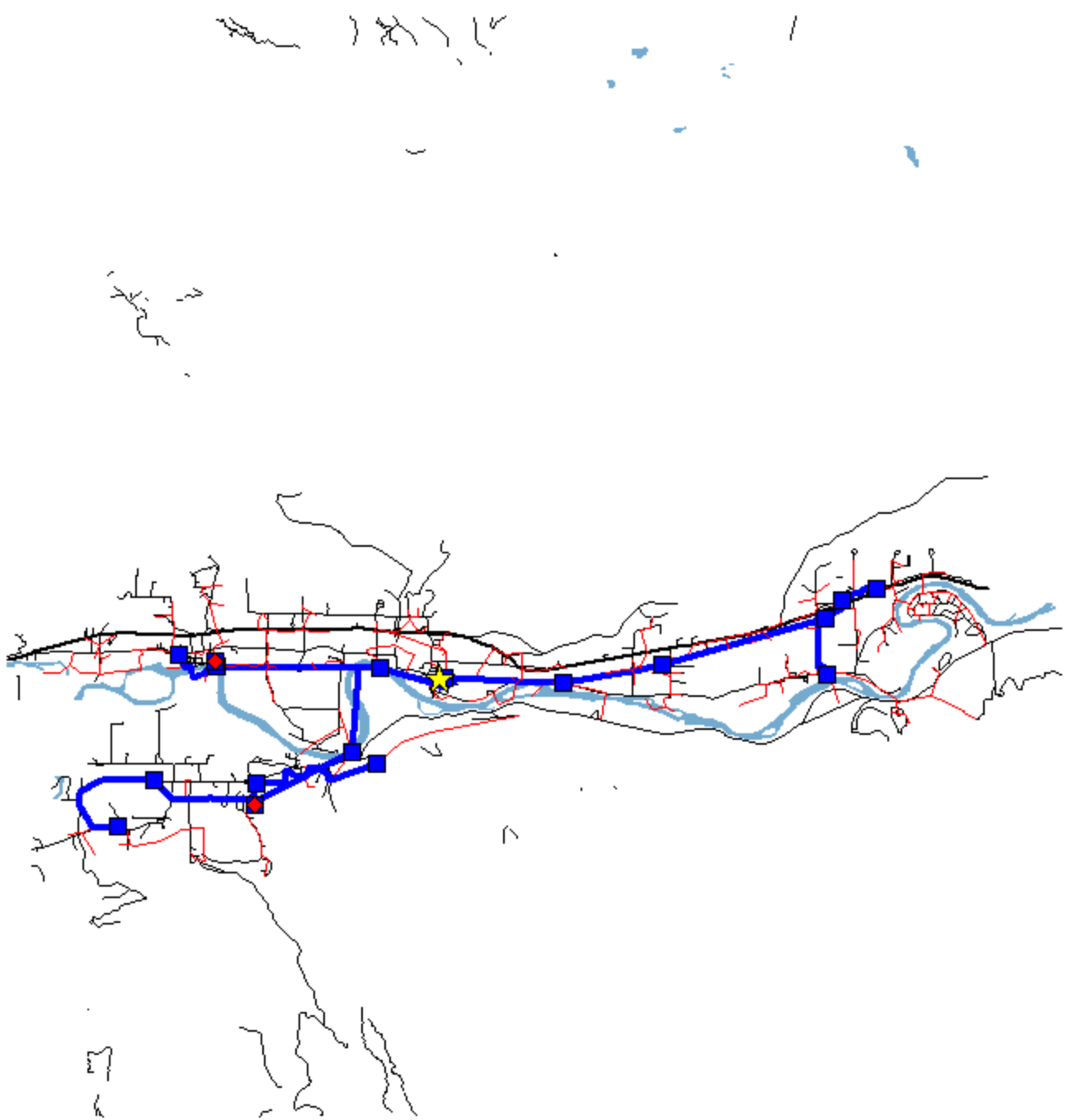
GRLDWAXX: VzCost Network



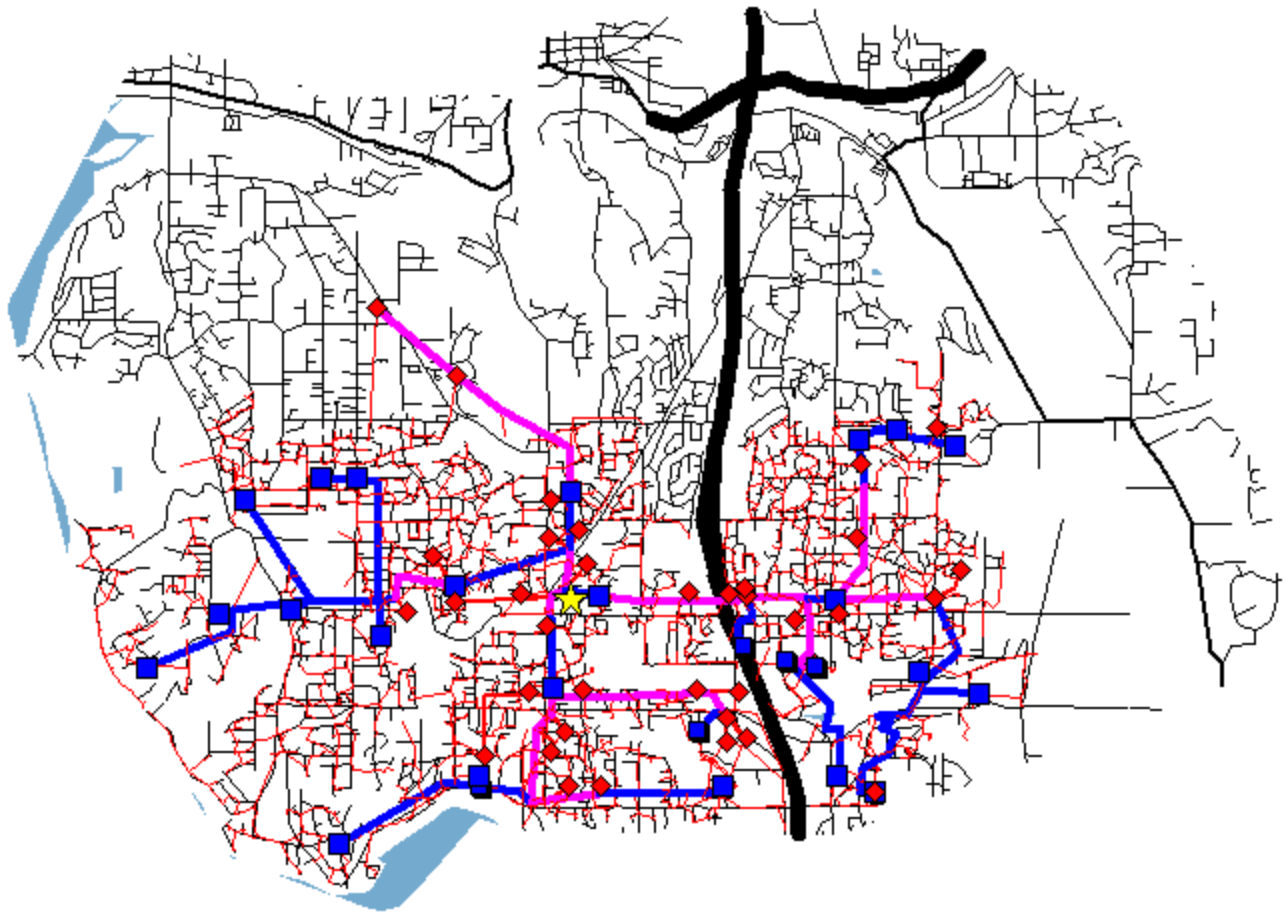
HLLKWAXX: VzCost Network



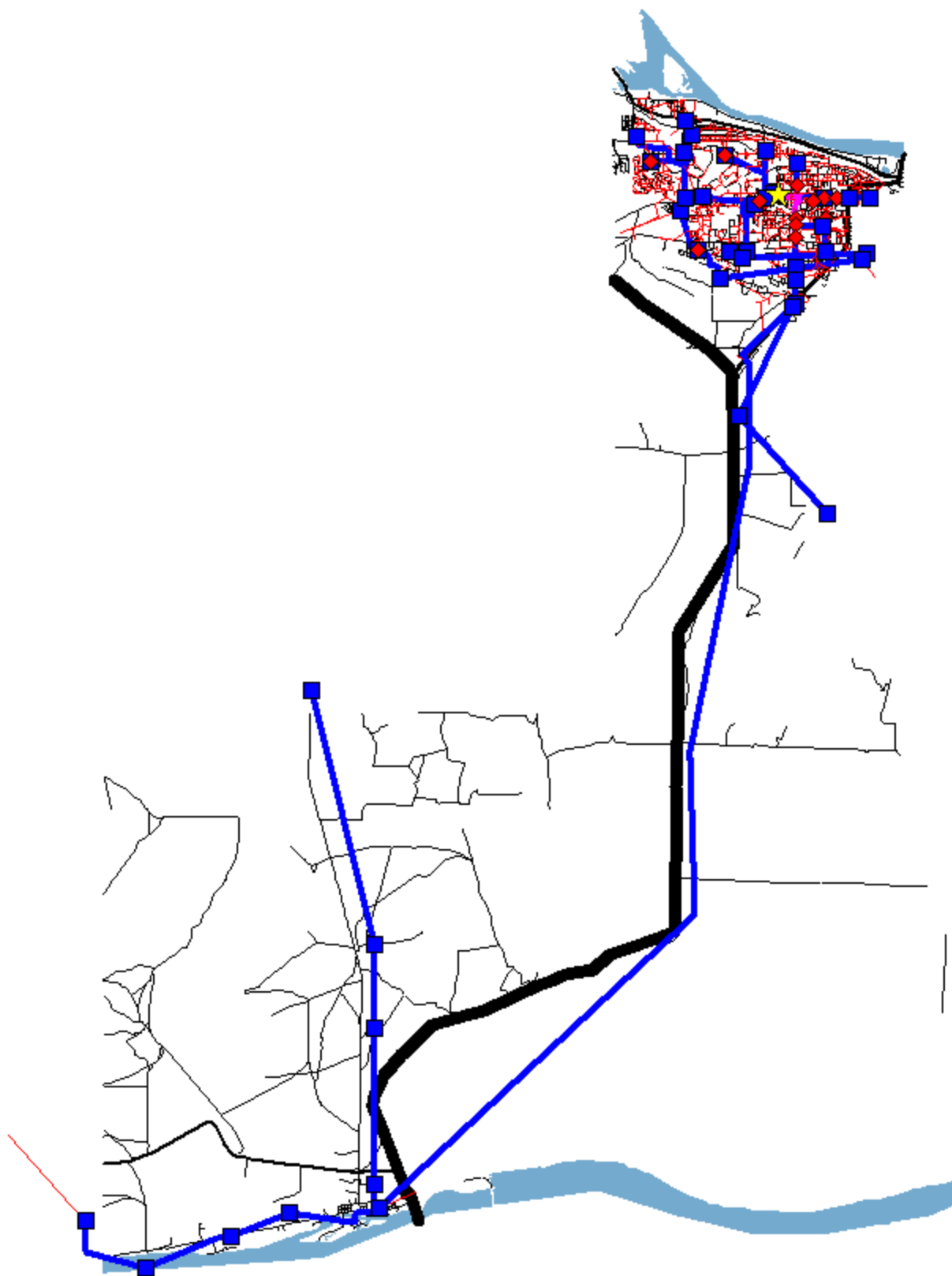
HMTNWAXA: VzCost Network



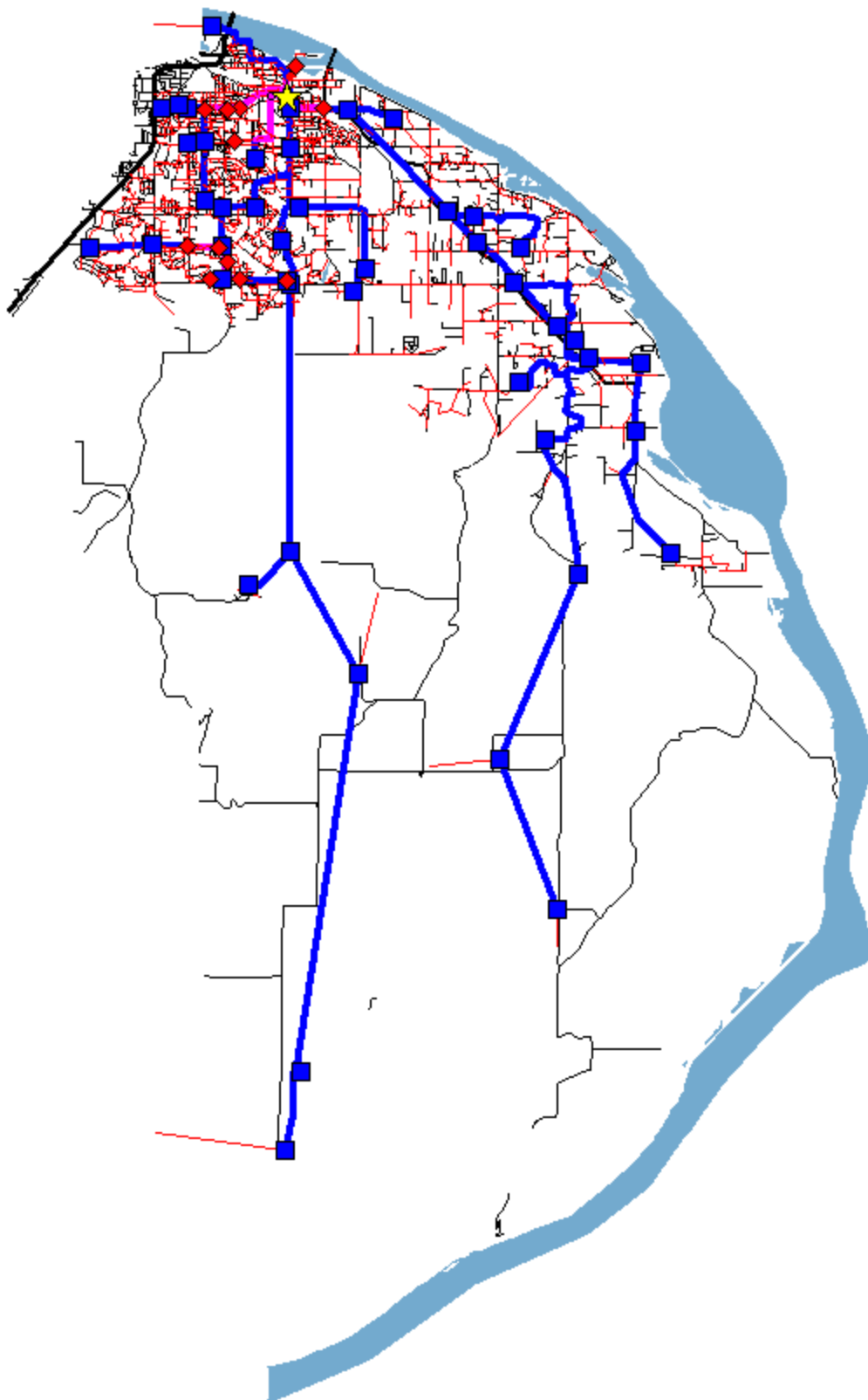
JUNTWAXA: VzCost Network



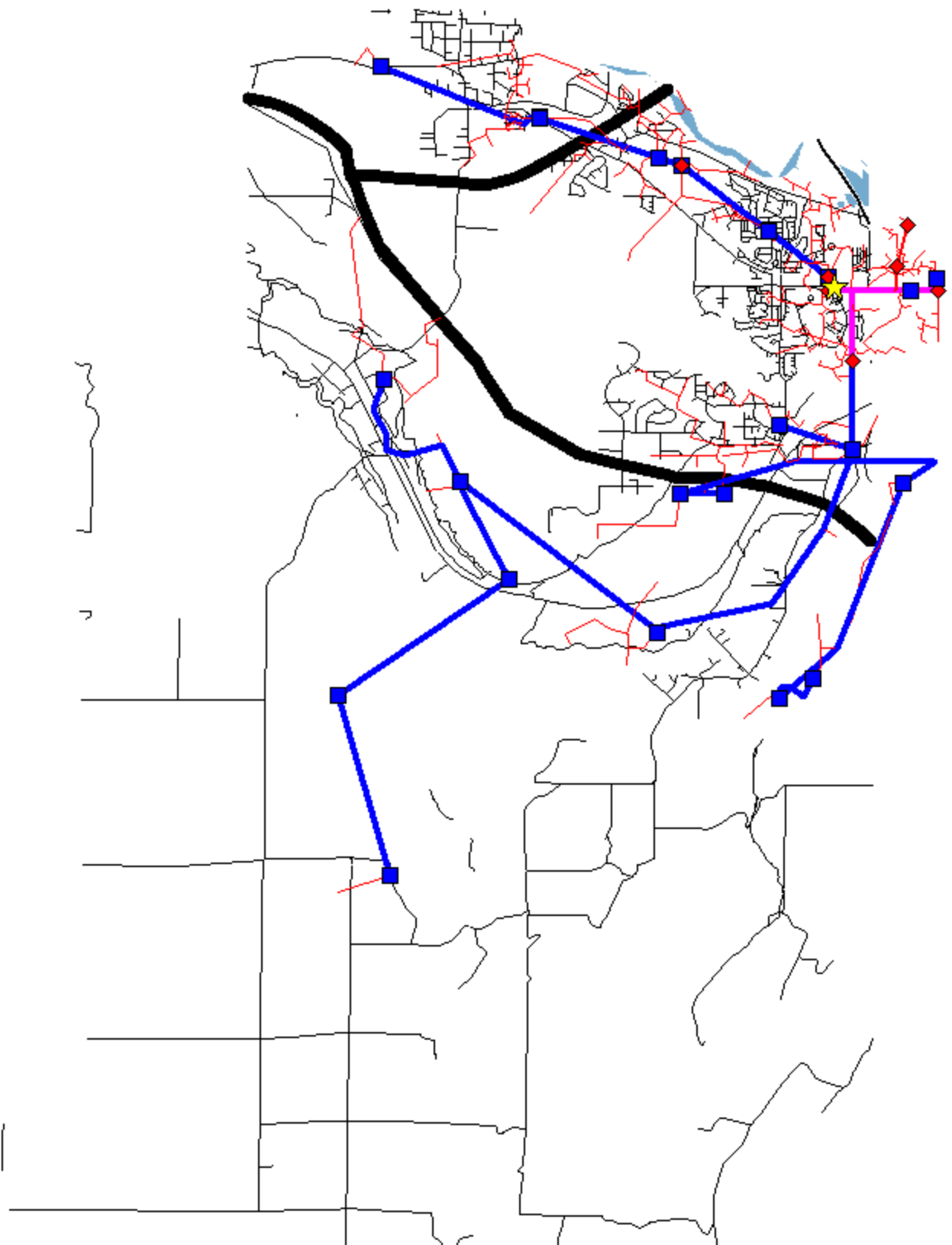
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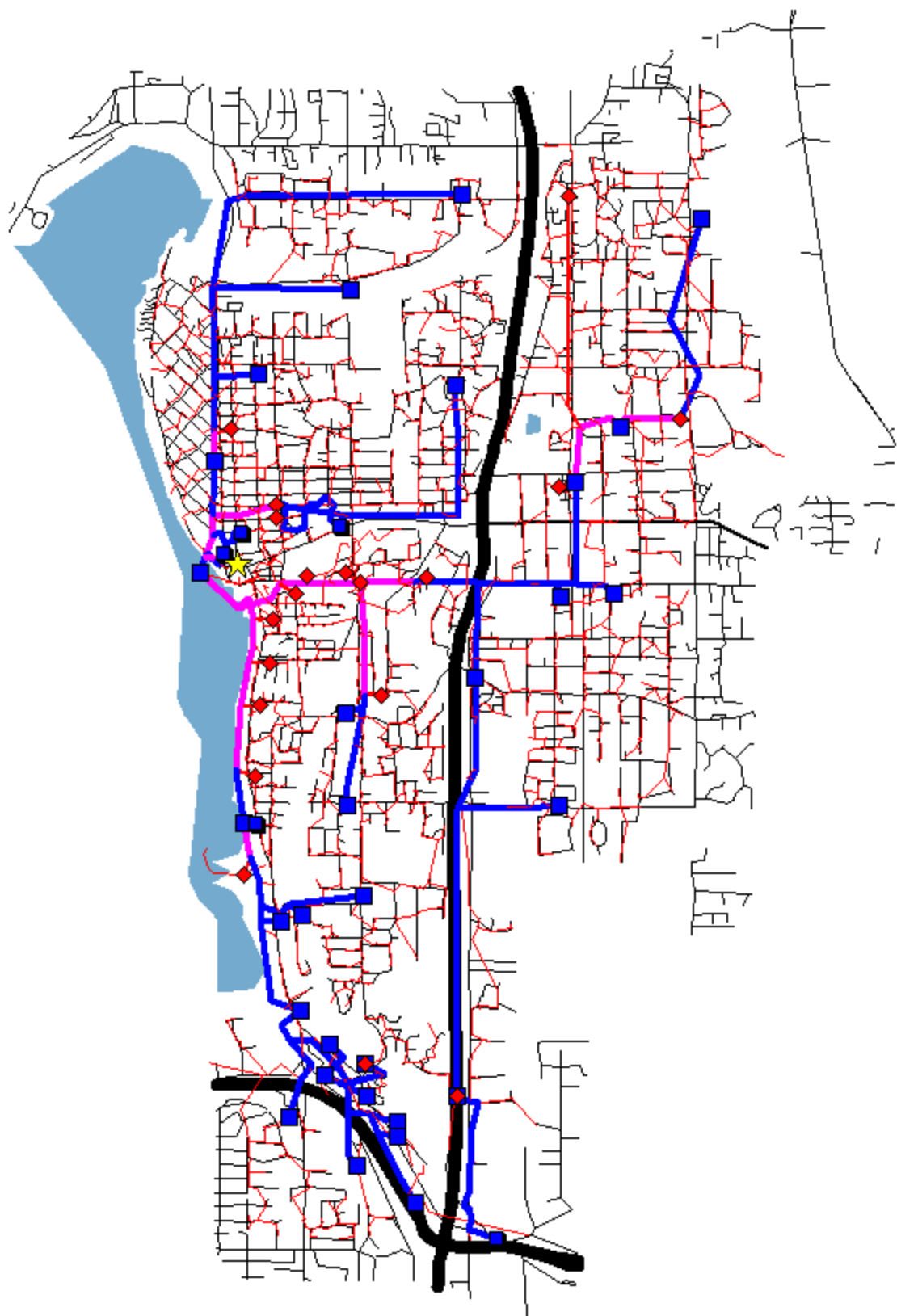
KNWCWAXB: VzCost Network



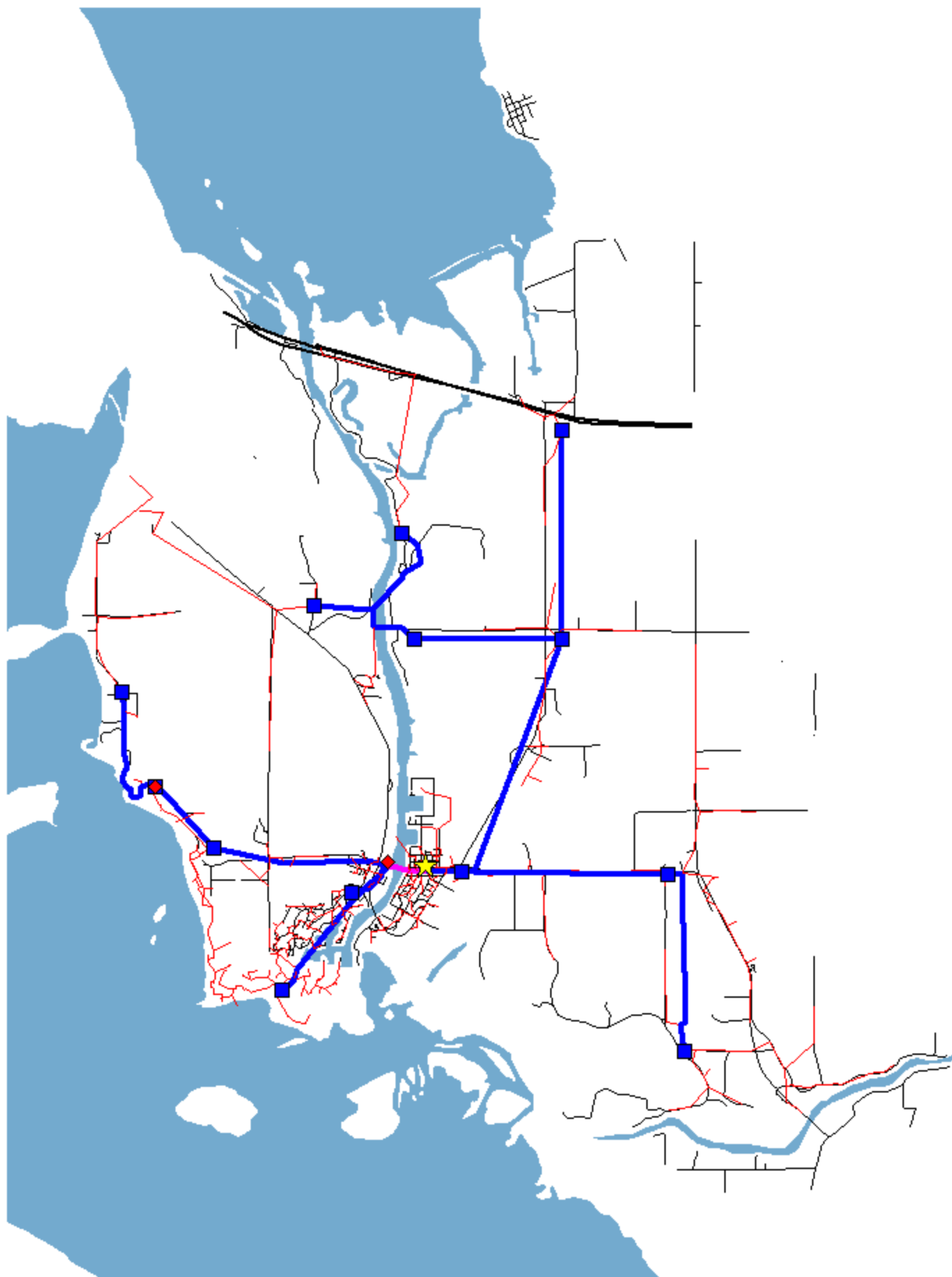
KNWCWAXC: VzCost Network



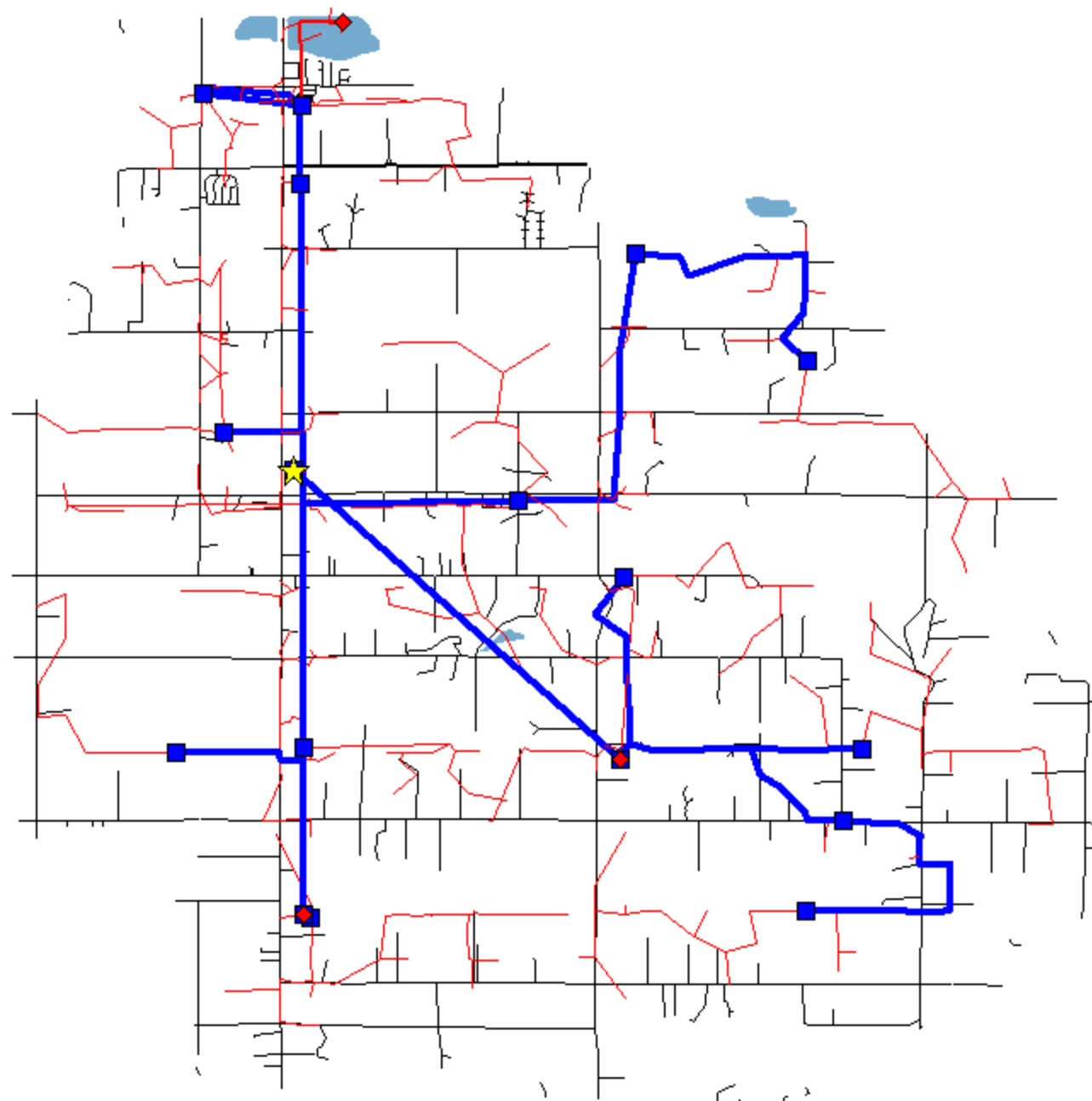
KRLDWAXX: VzCost Network



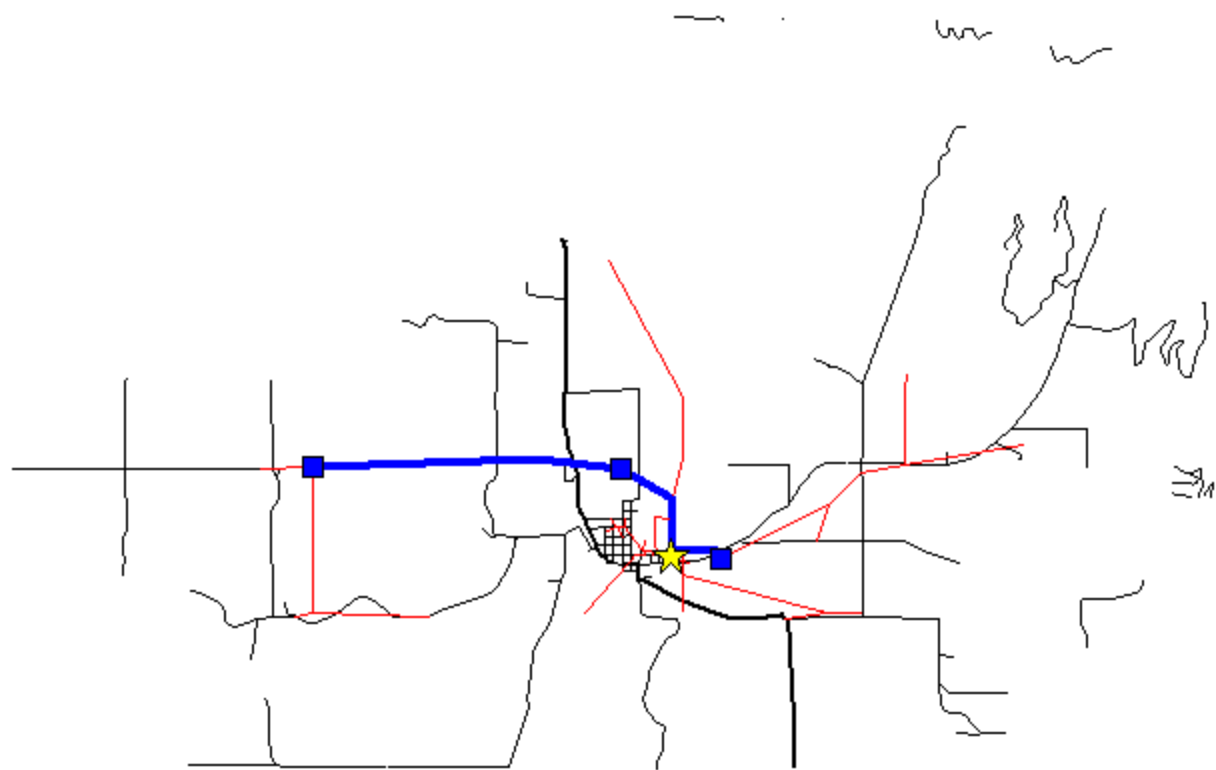
LACNWAXX: VzCost Network



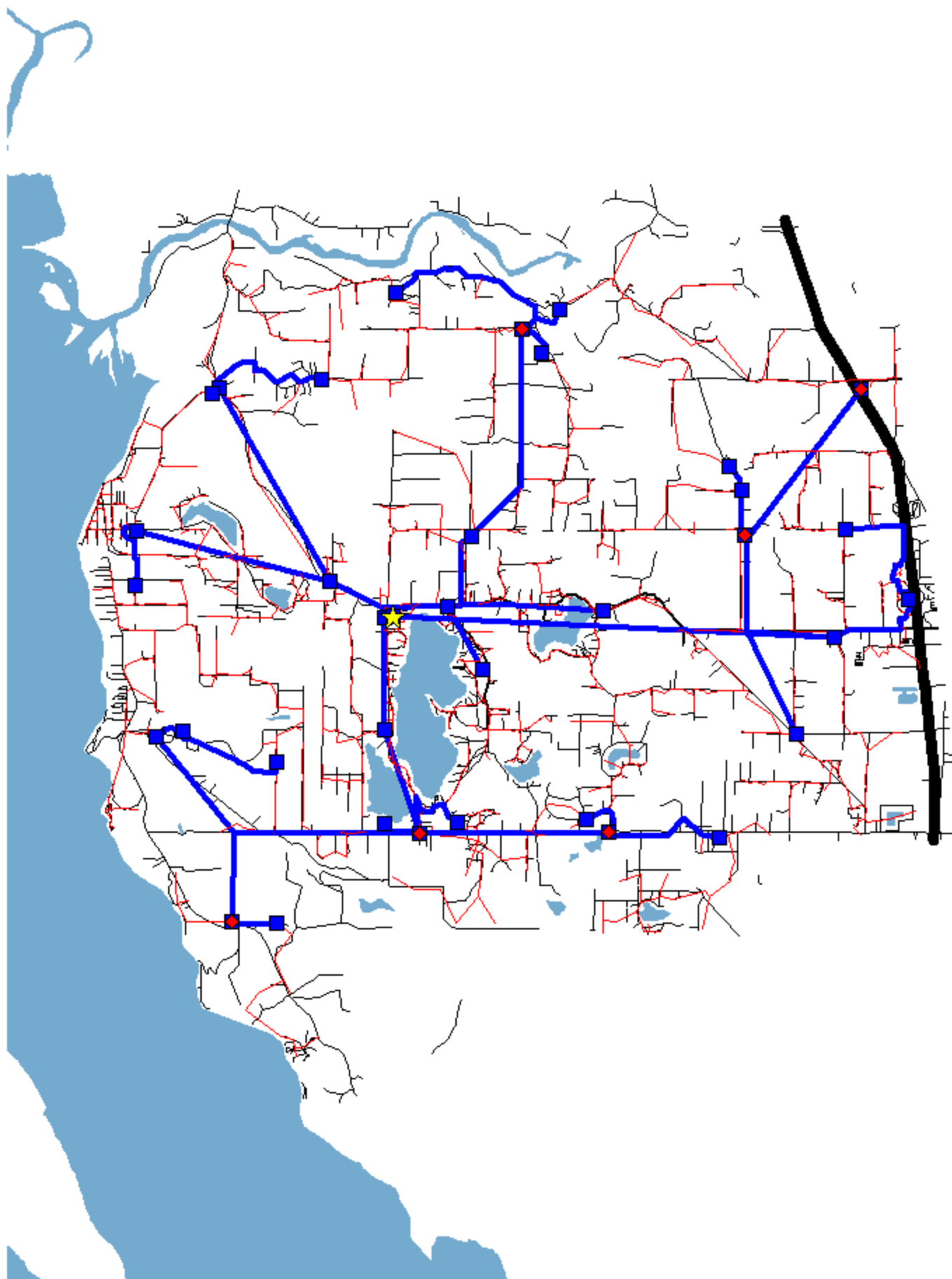
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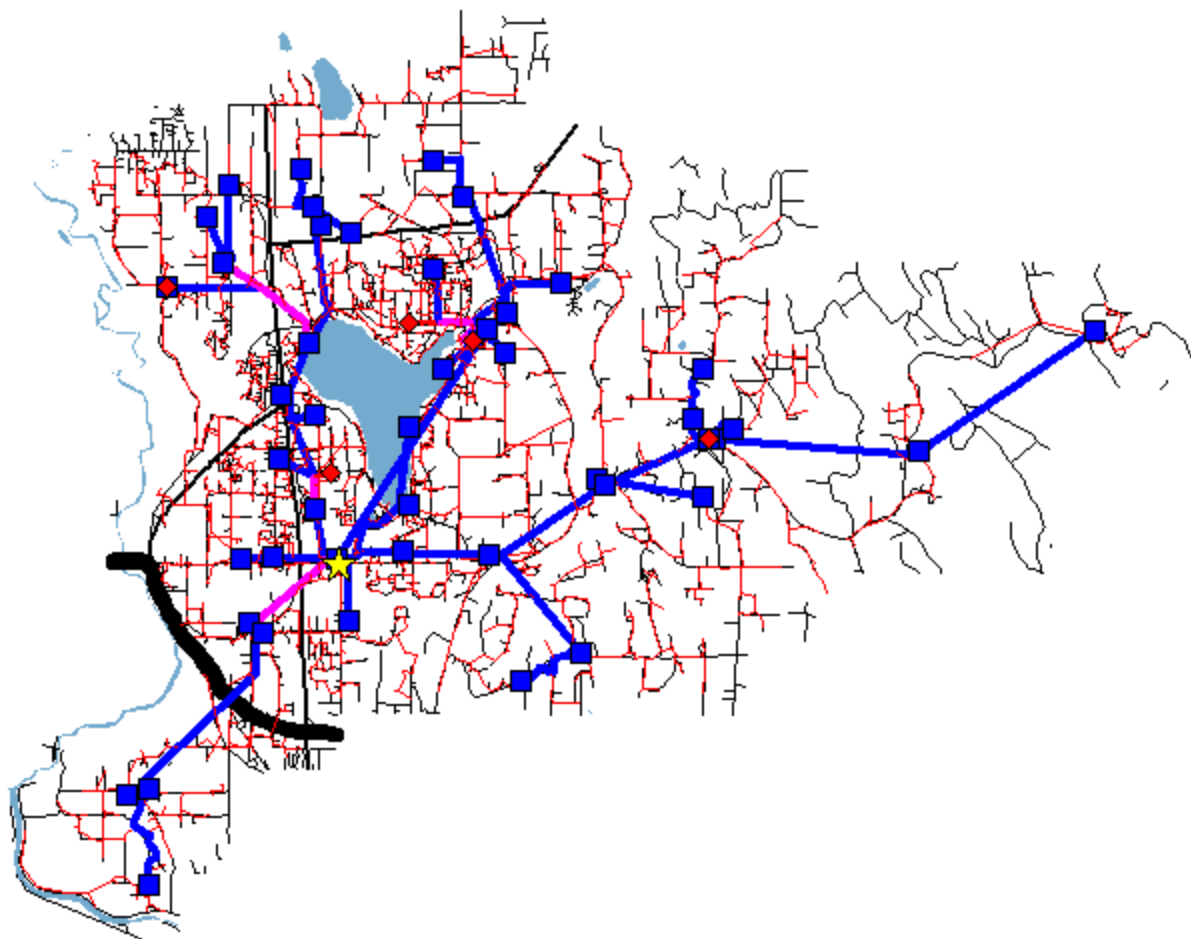
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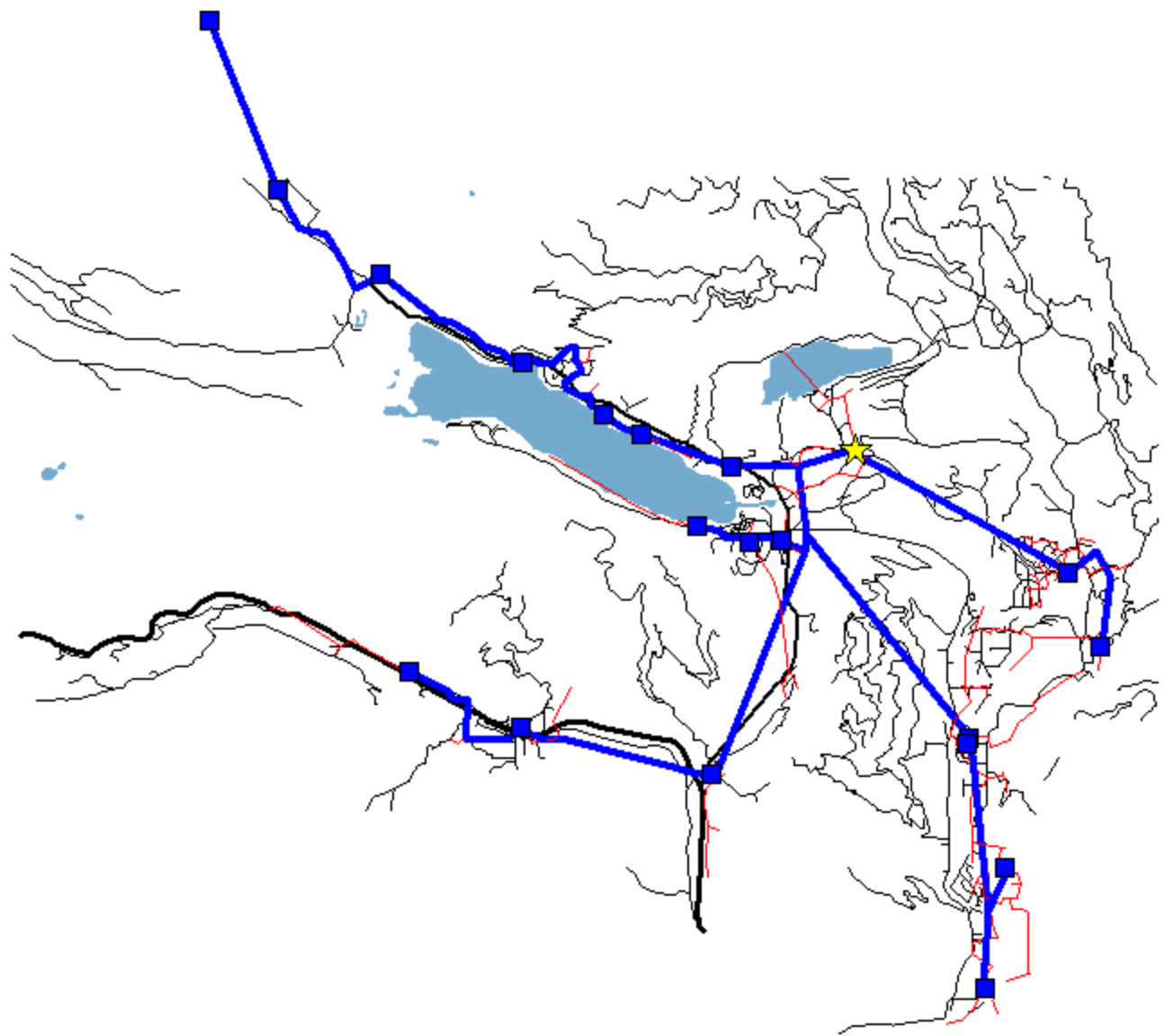
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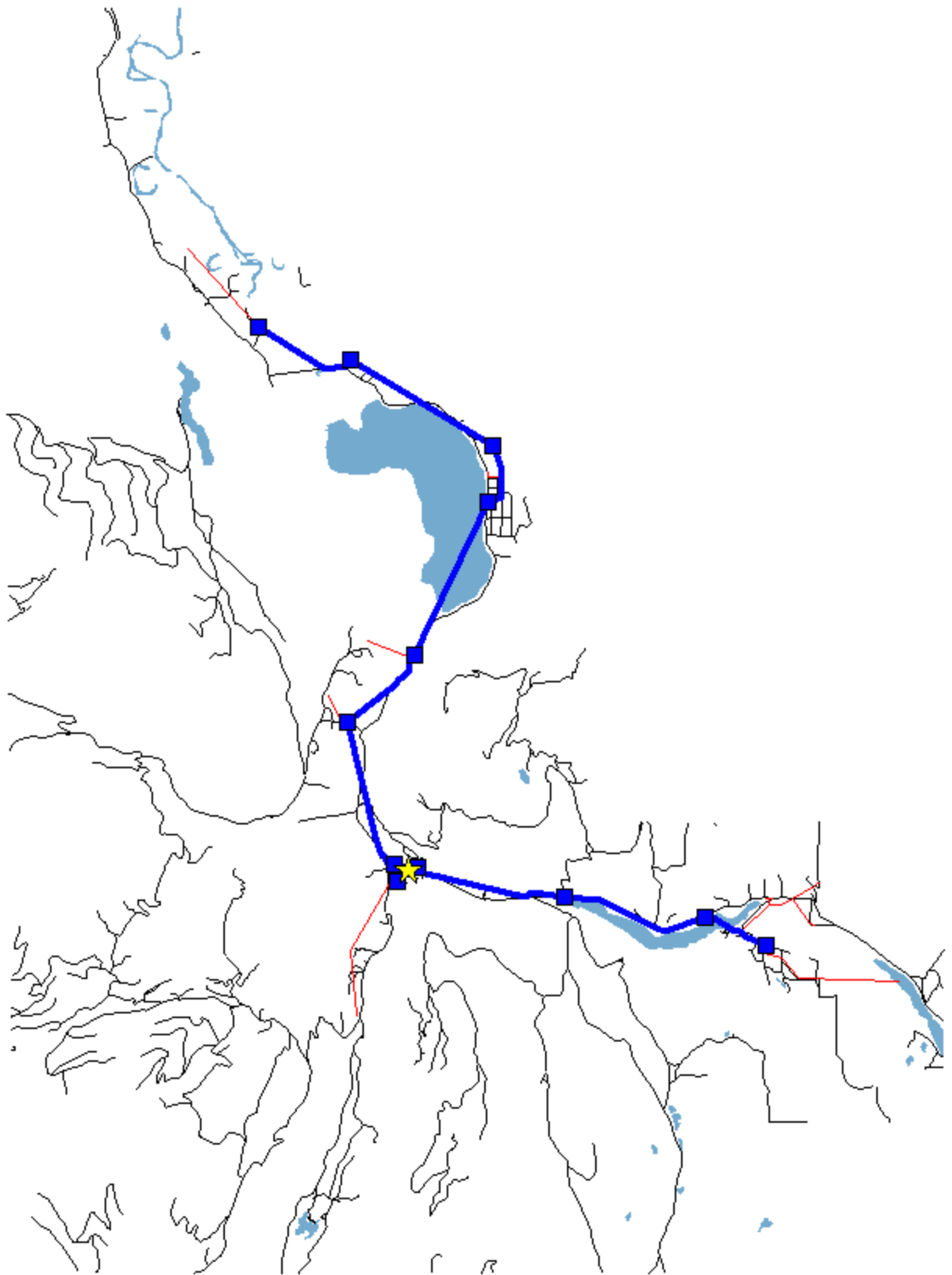
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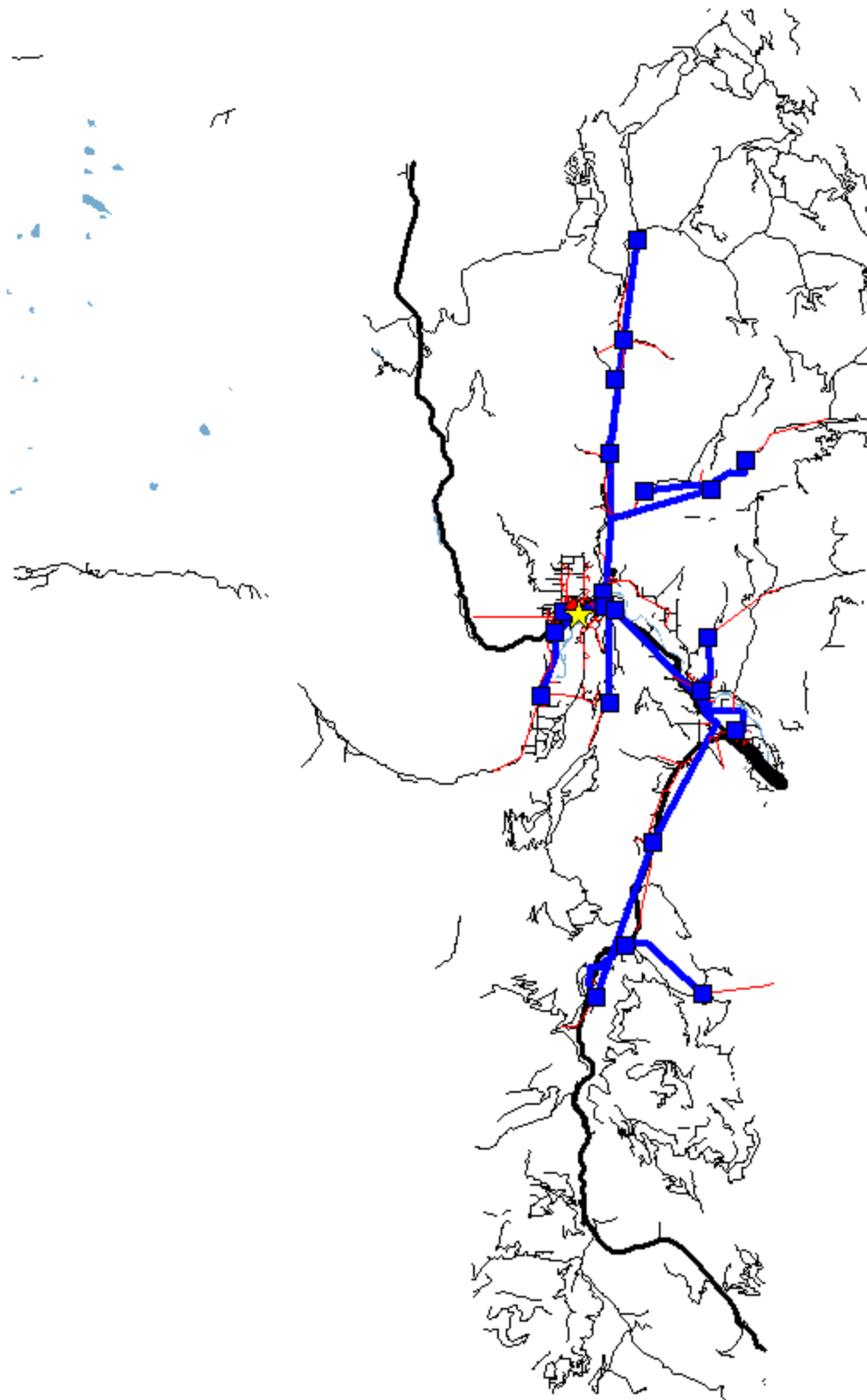
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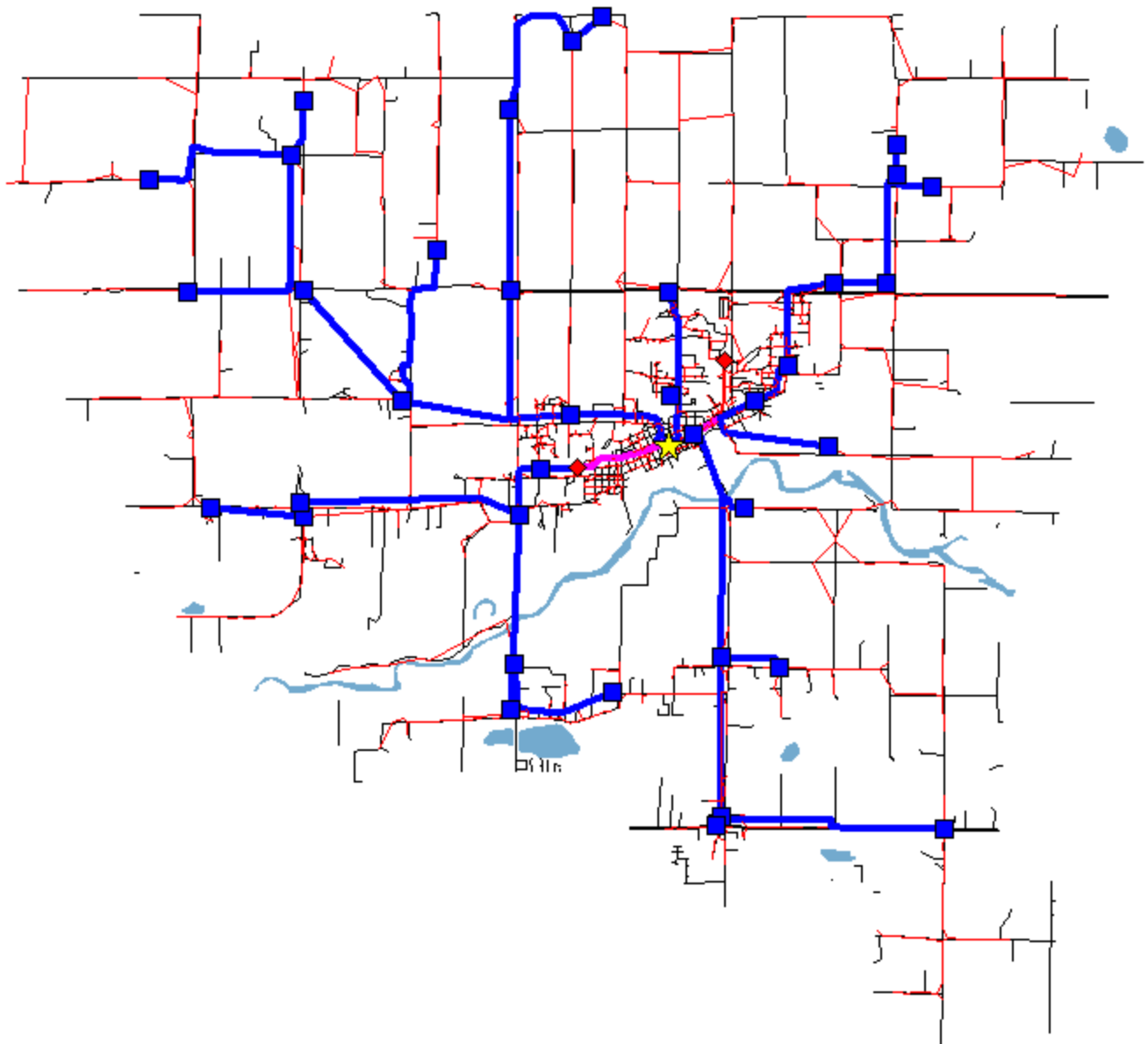
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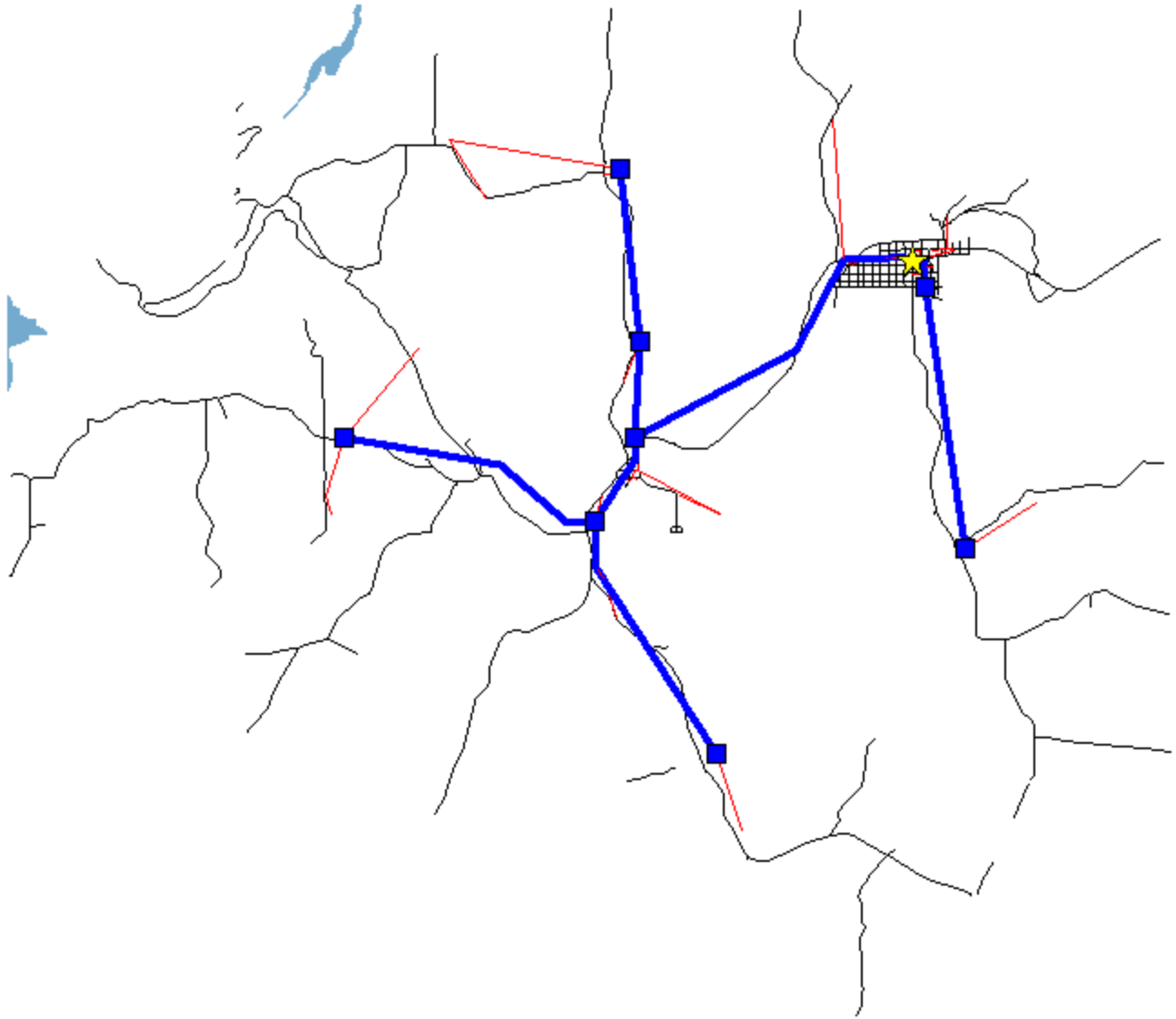
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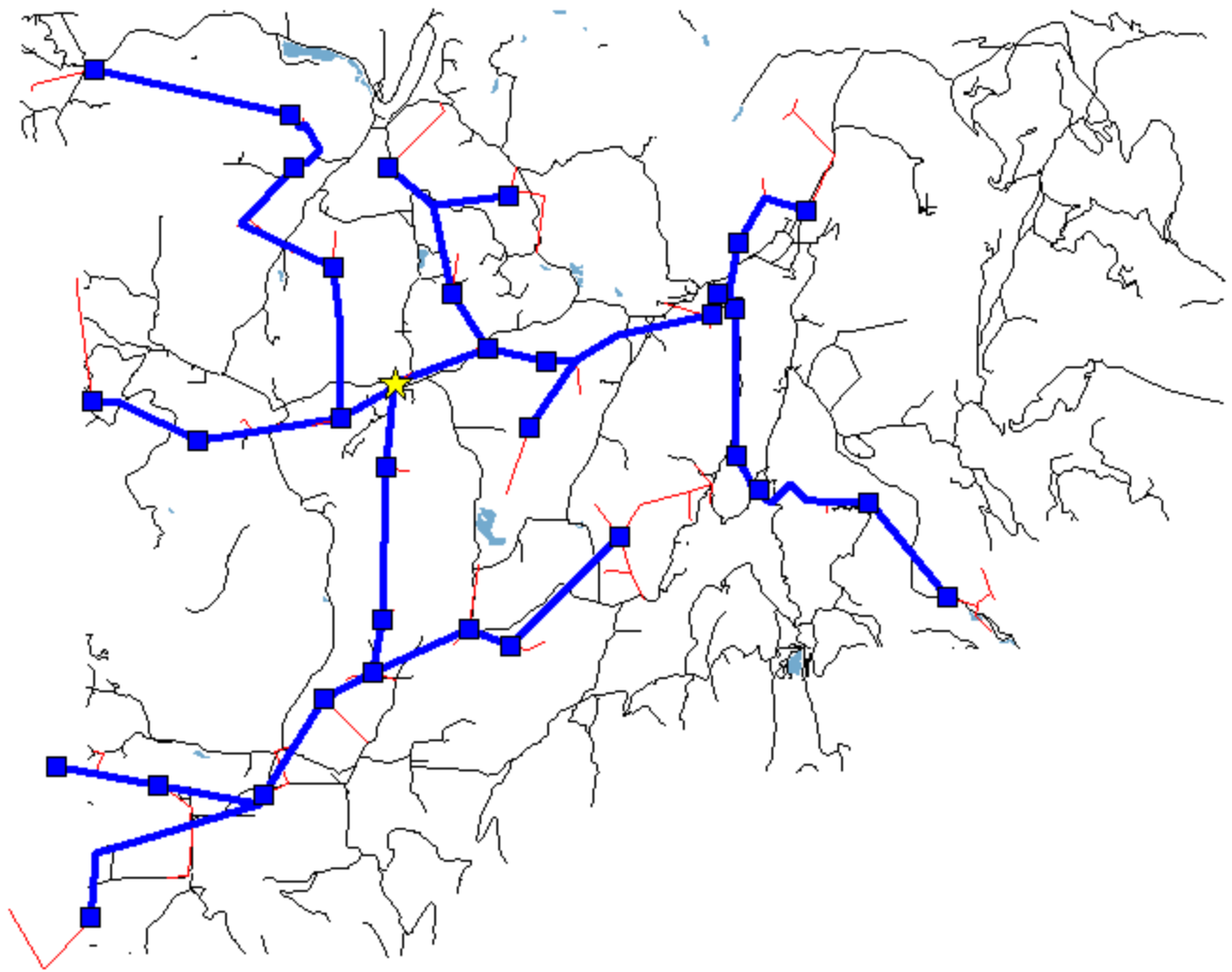
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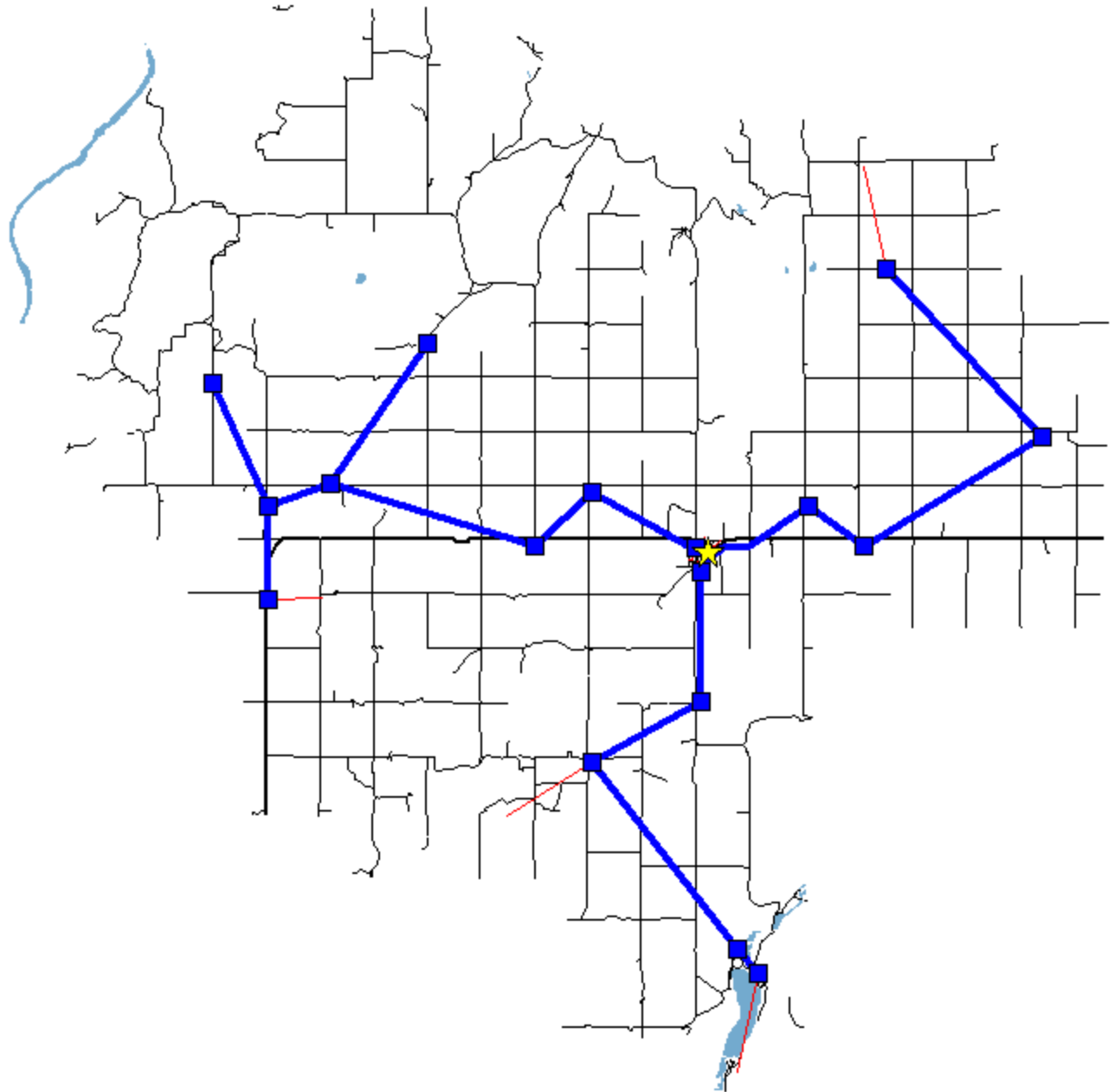
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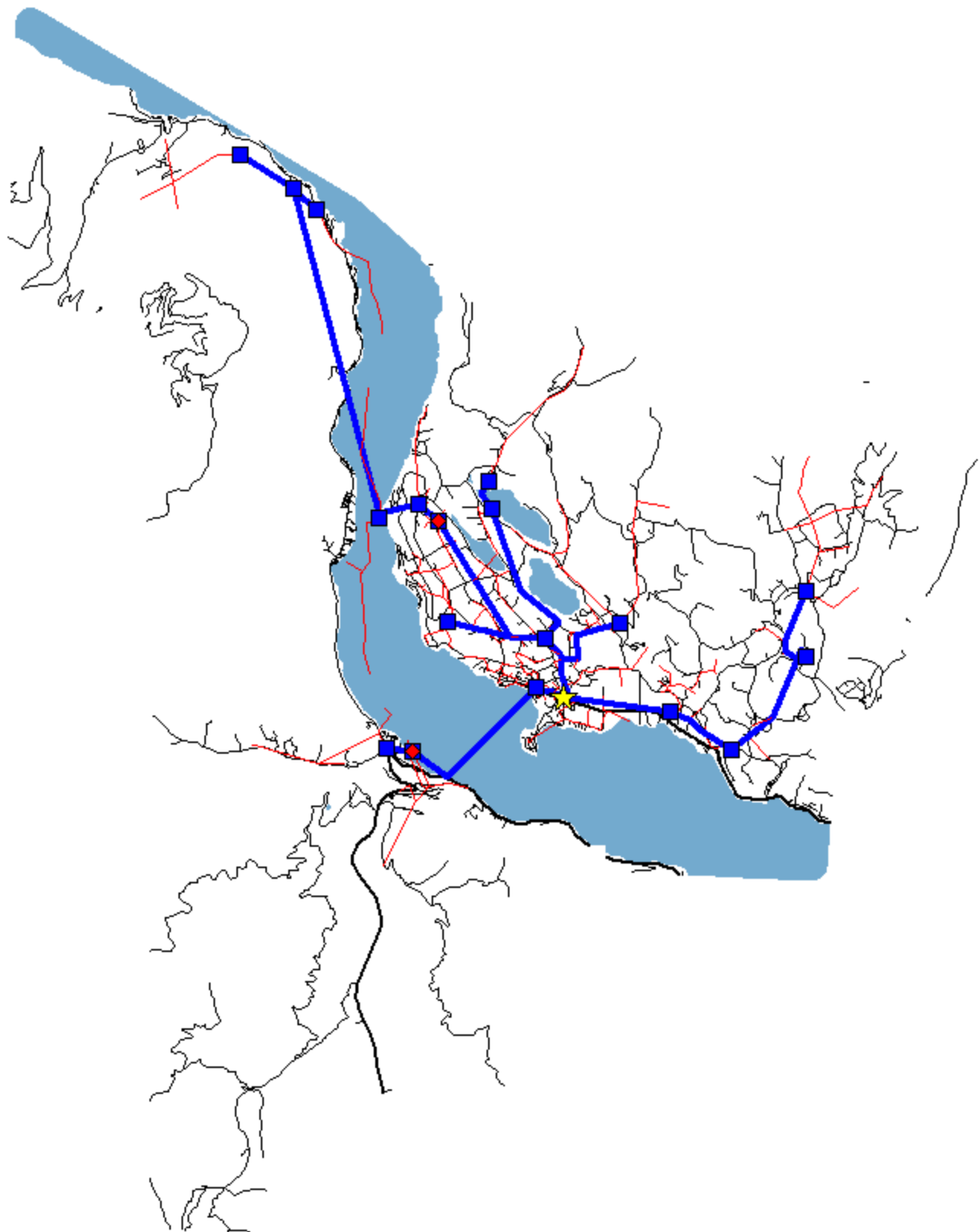
MLSNWAXA: VzCost Network



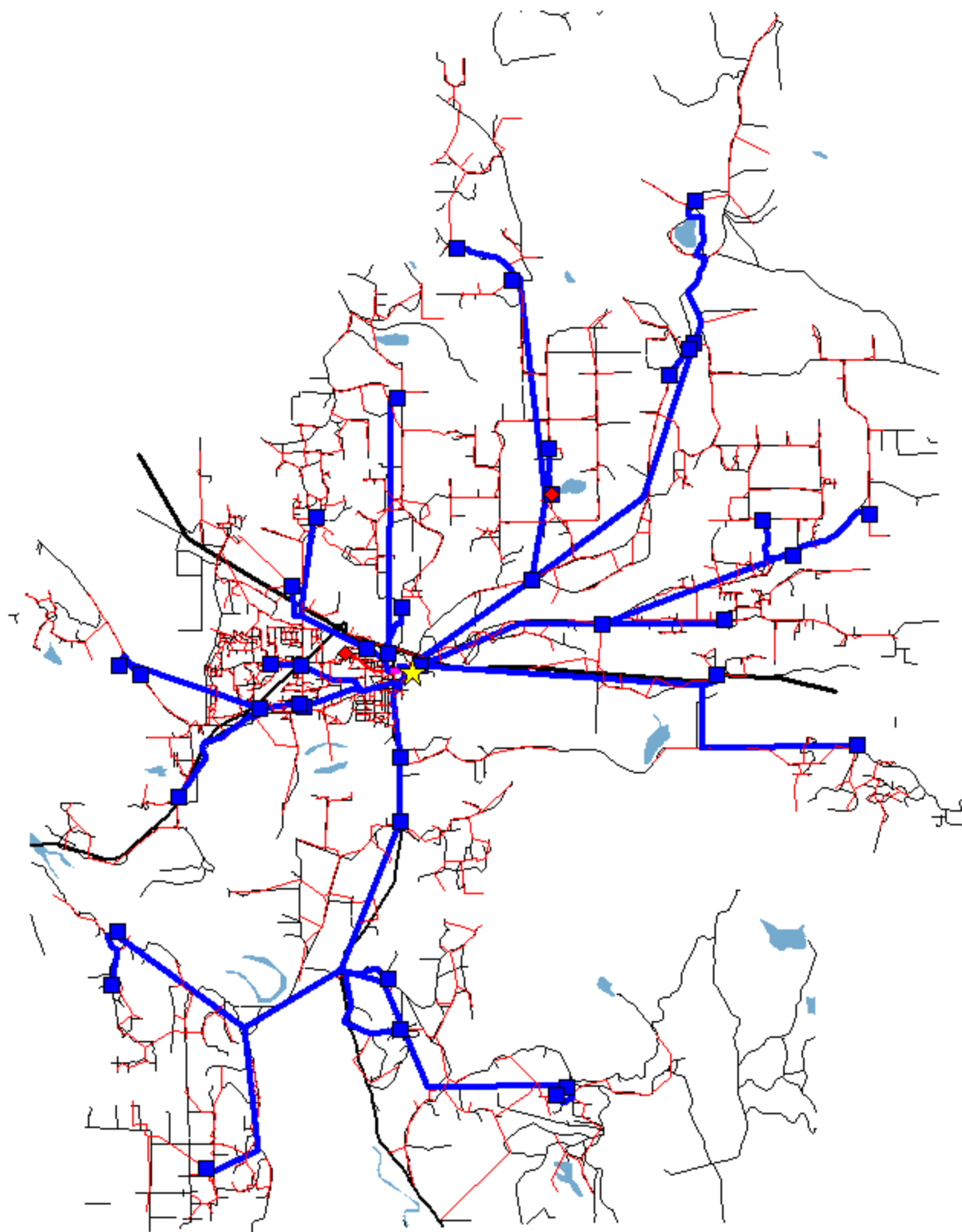
MNFDWAXX: VzCost Network



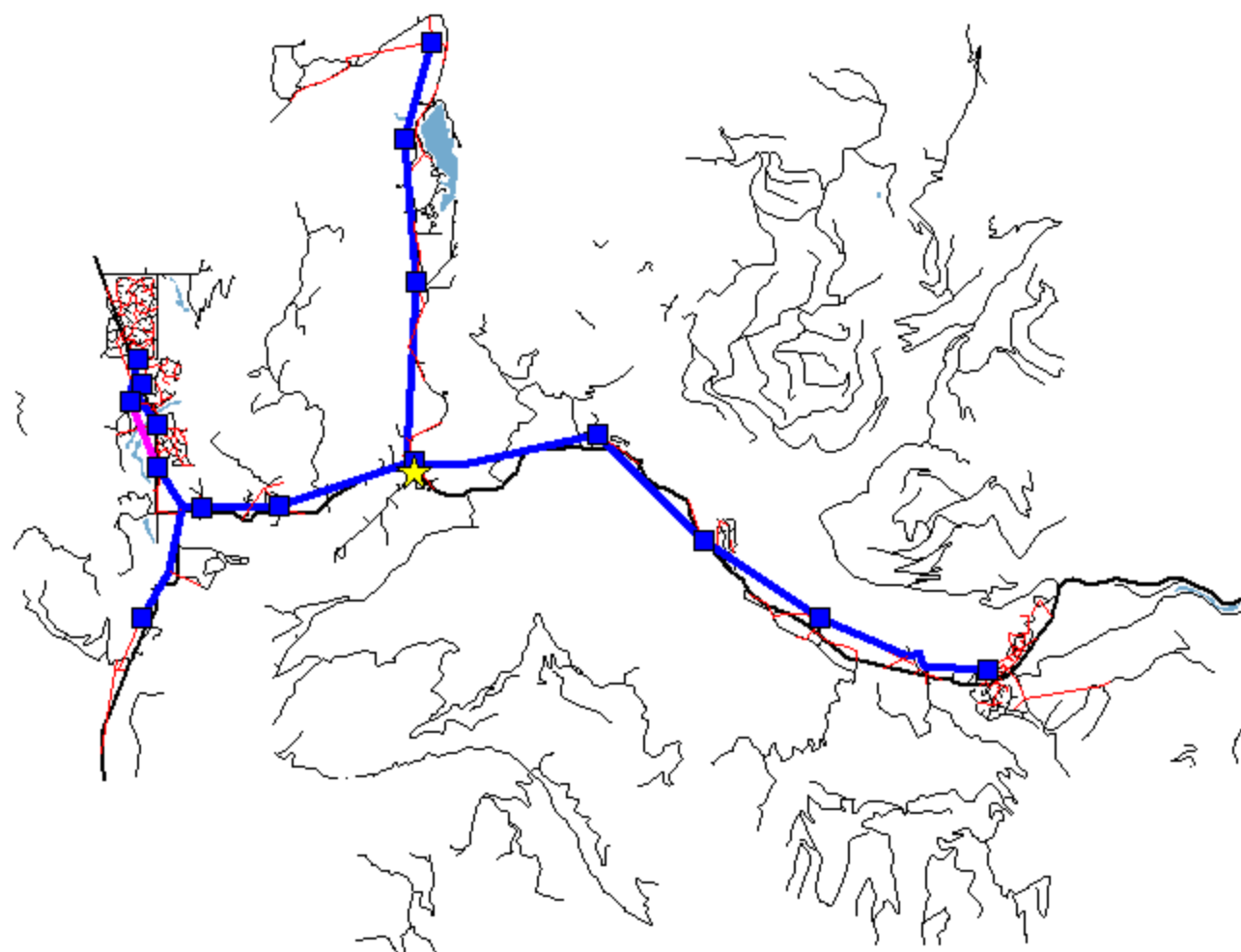
MNSNWAXA: VzCost Network



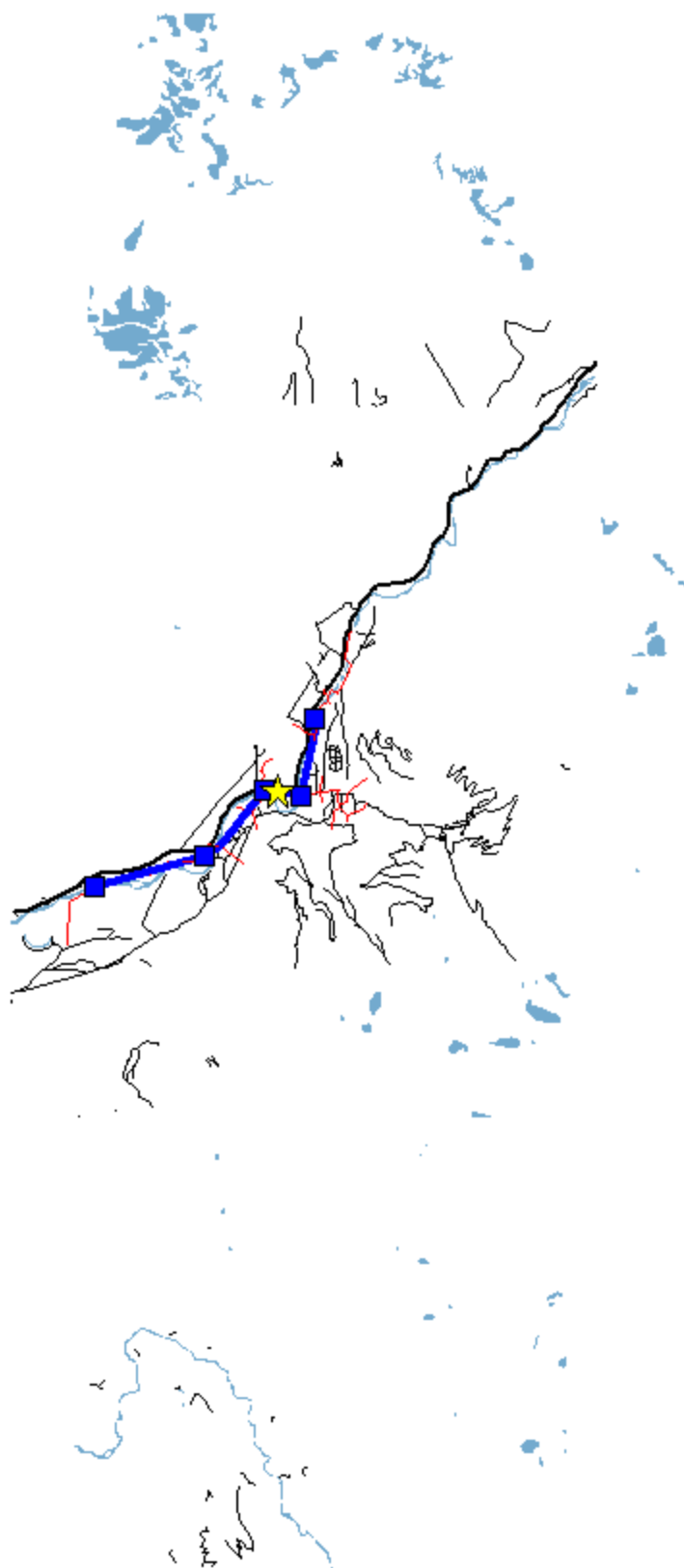
MONRWAXX: VzCost Network



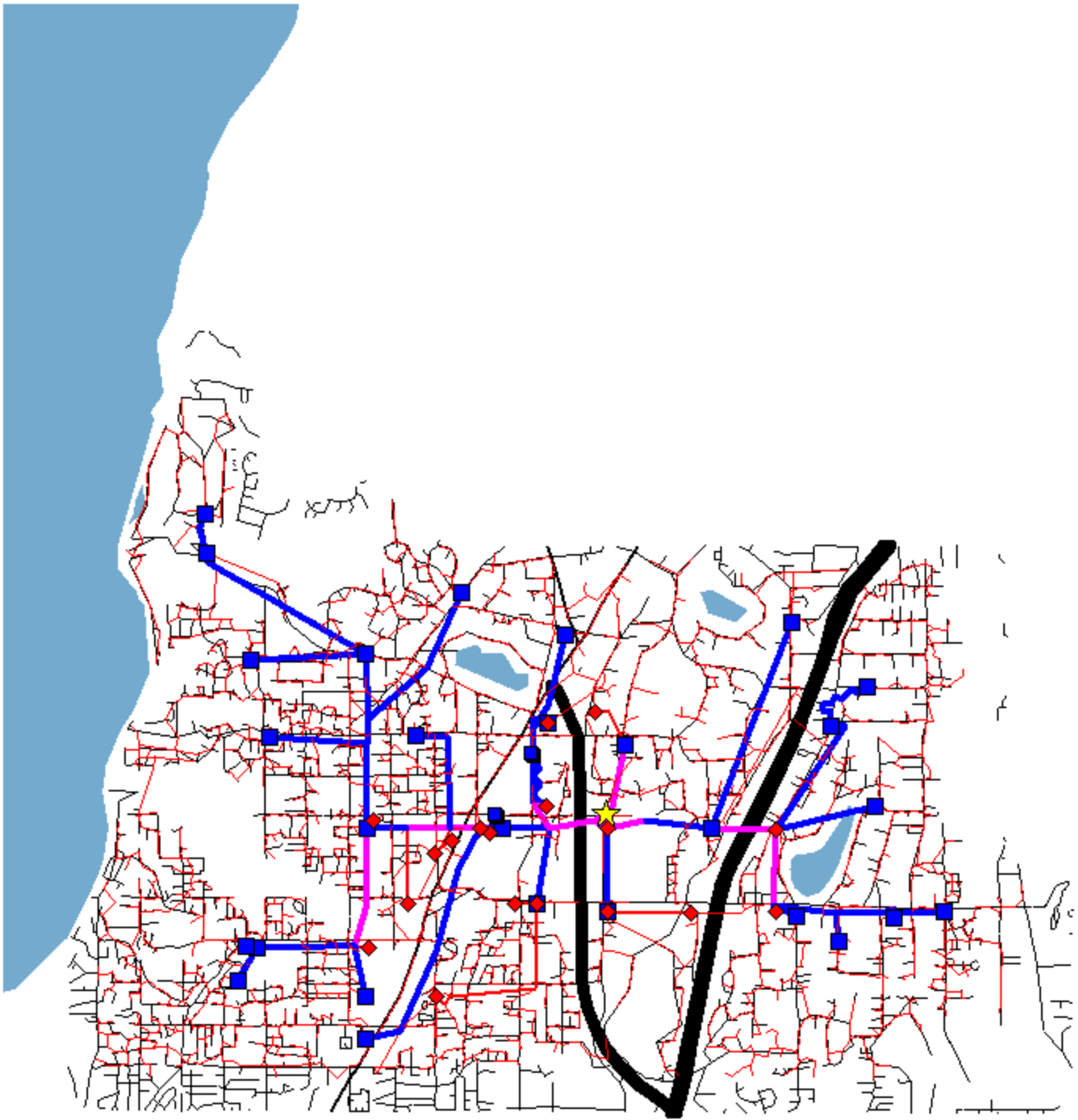
MPFLWAXA: VzCost Network



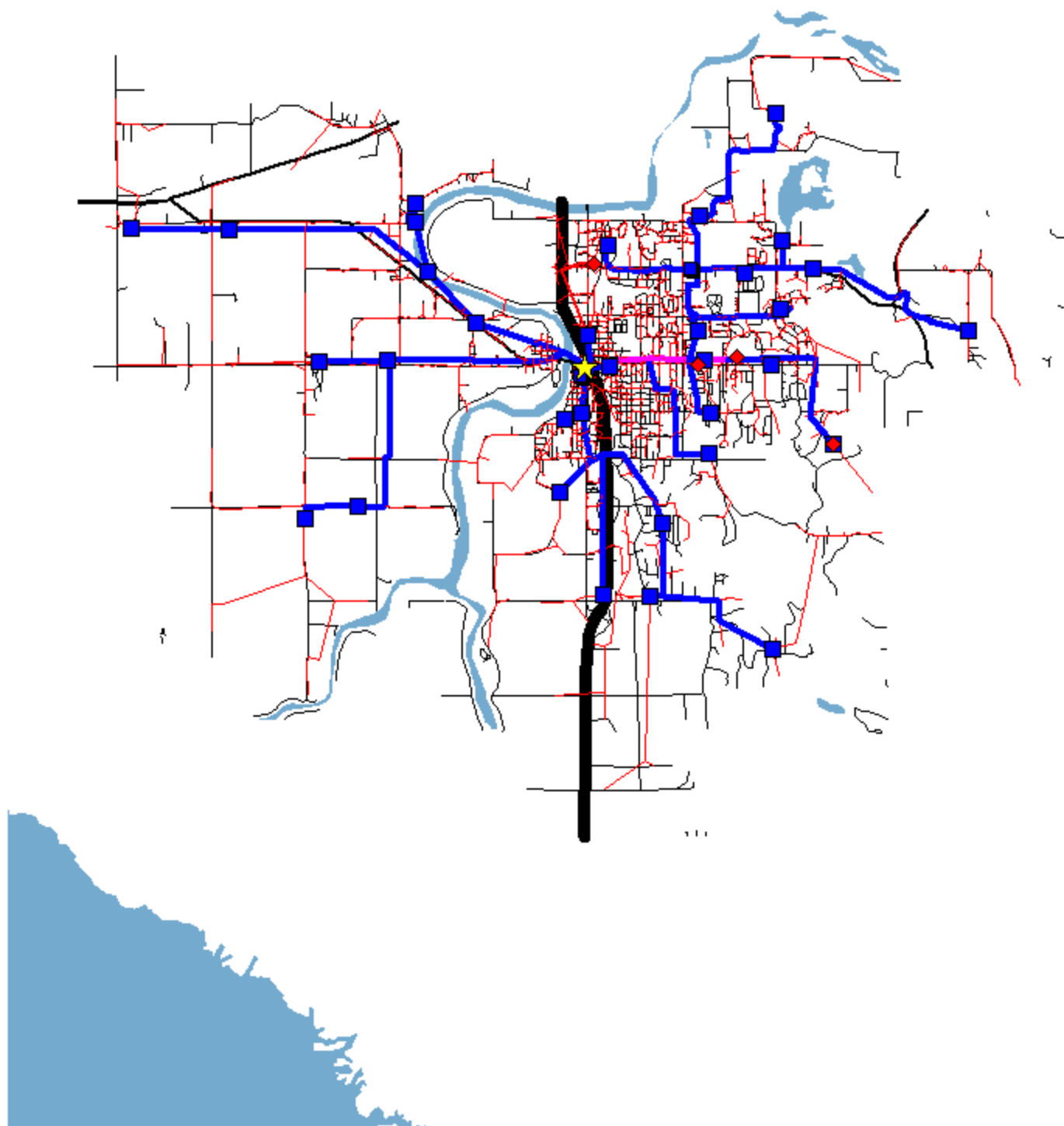
MRBLWAXX: VzCost Network



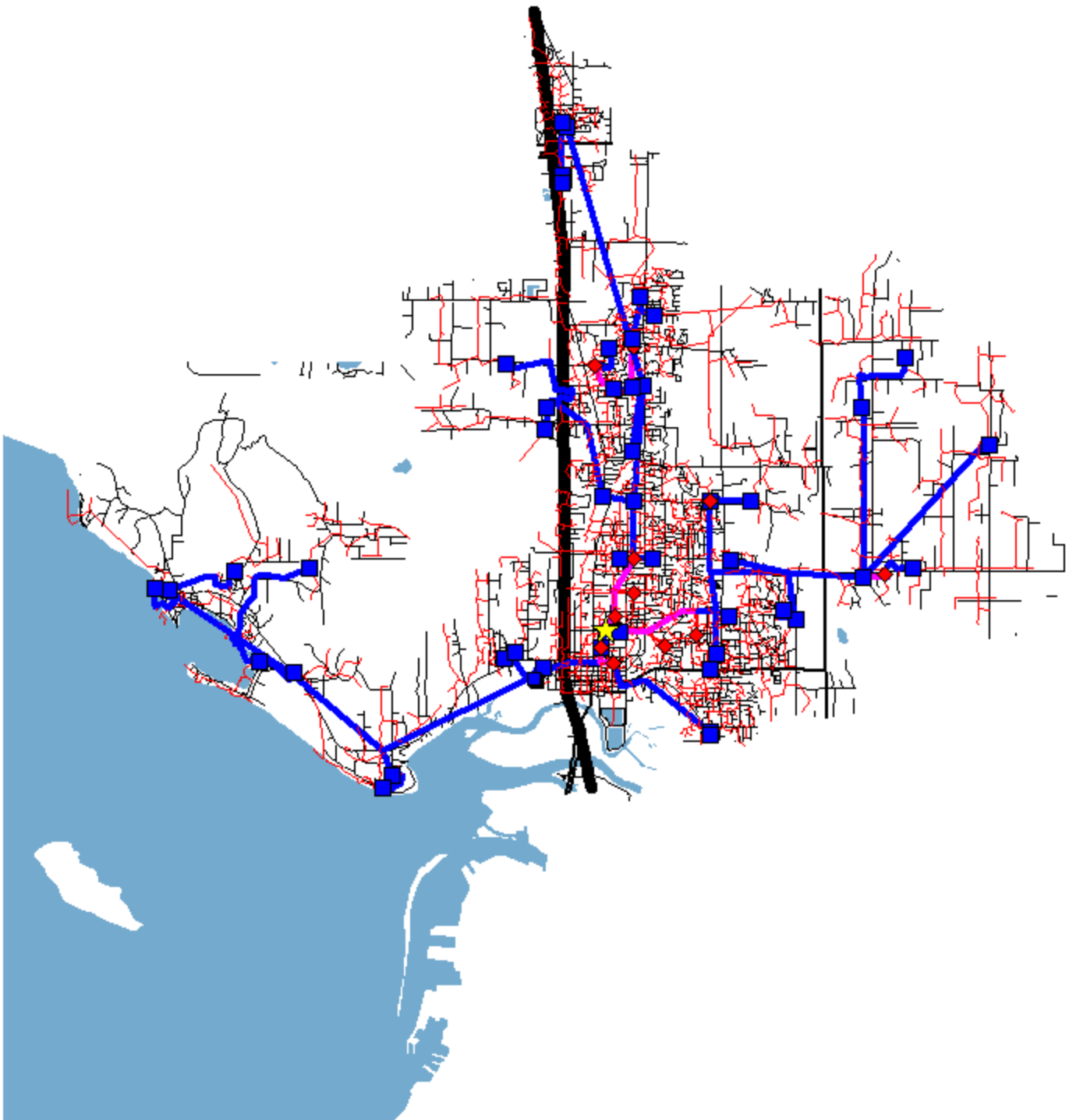
MRWYWAXA: VzCost Network



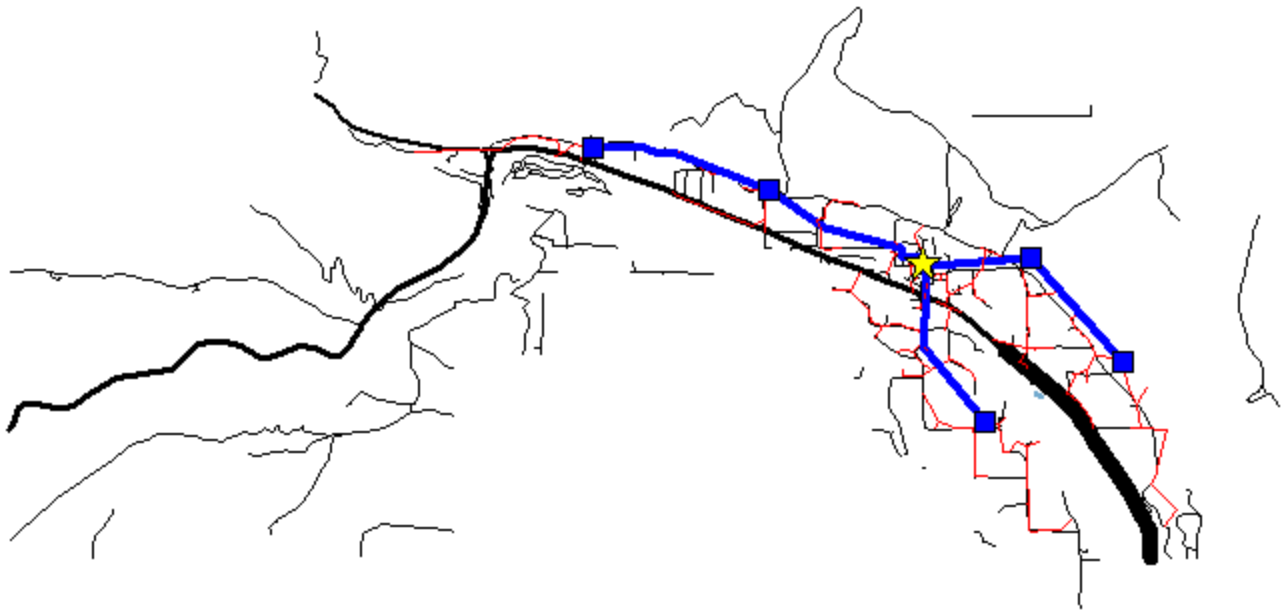
MTVRWAXX: VzCost Network



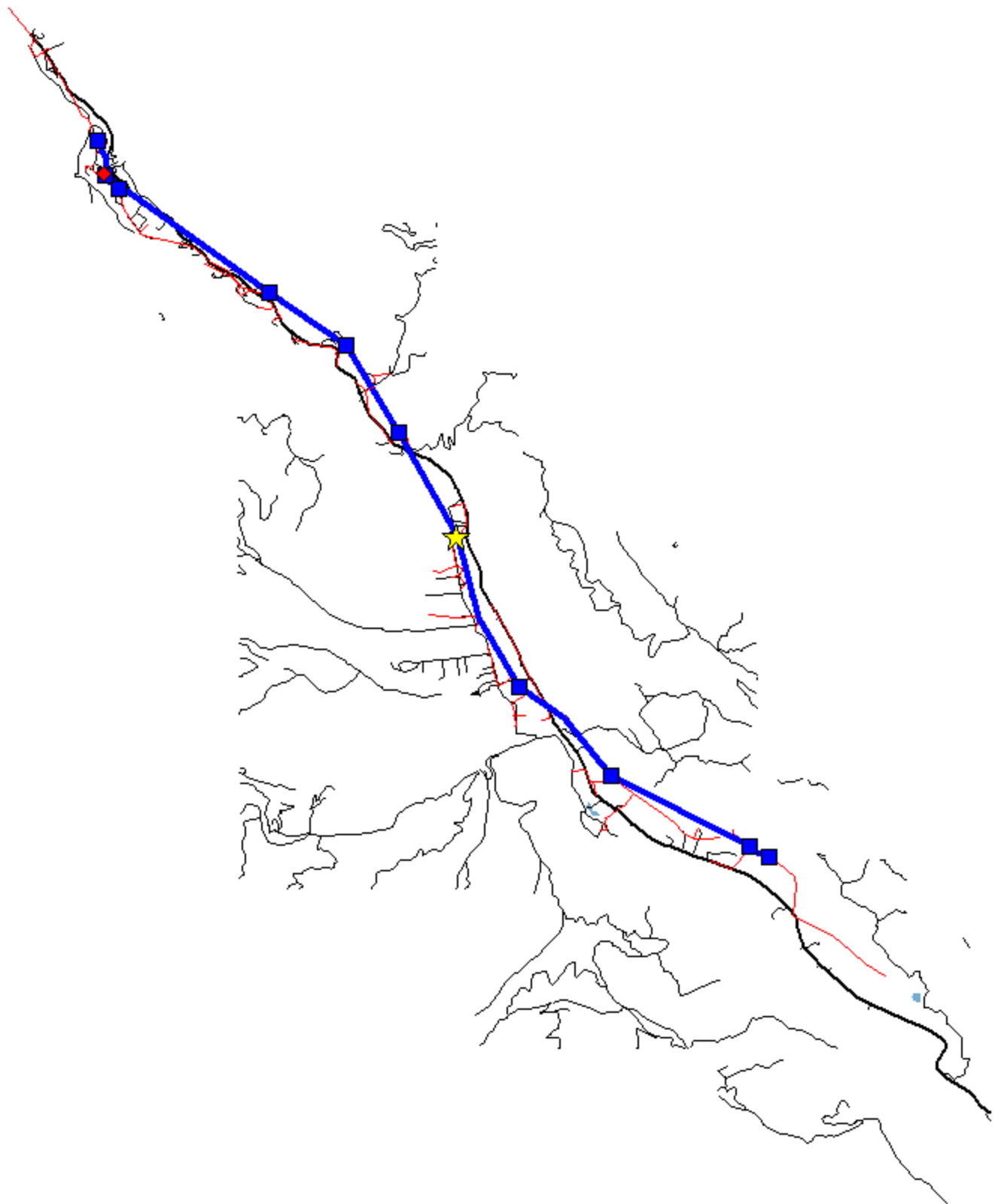
MYVIWAXX: VzCost Network



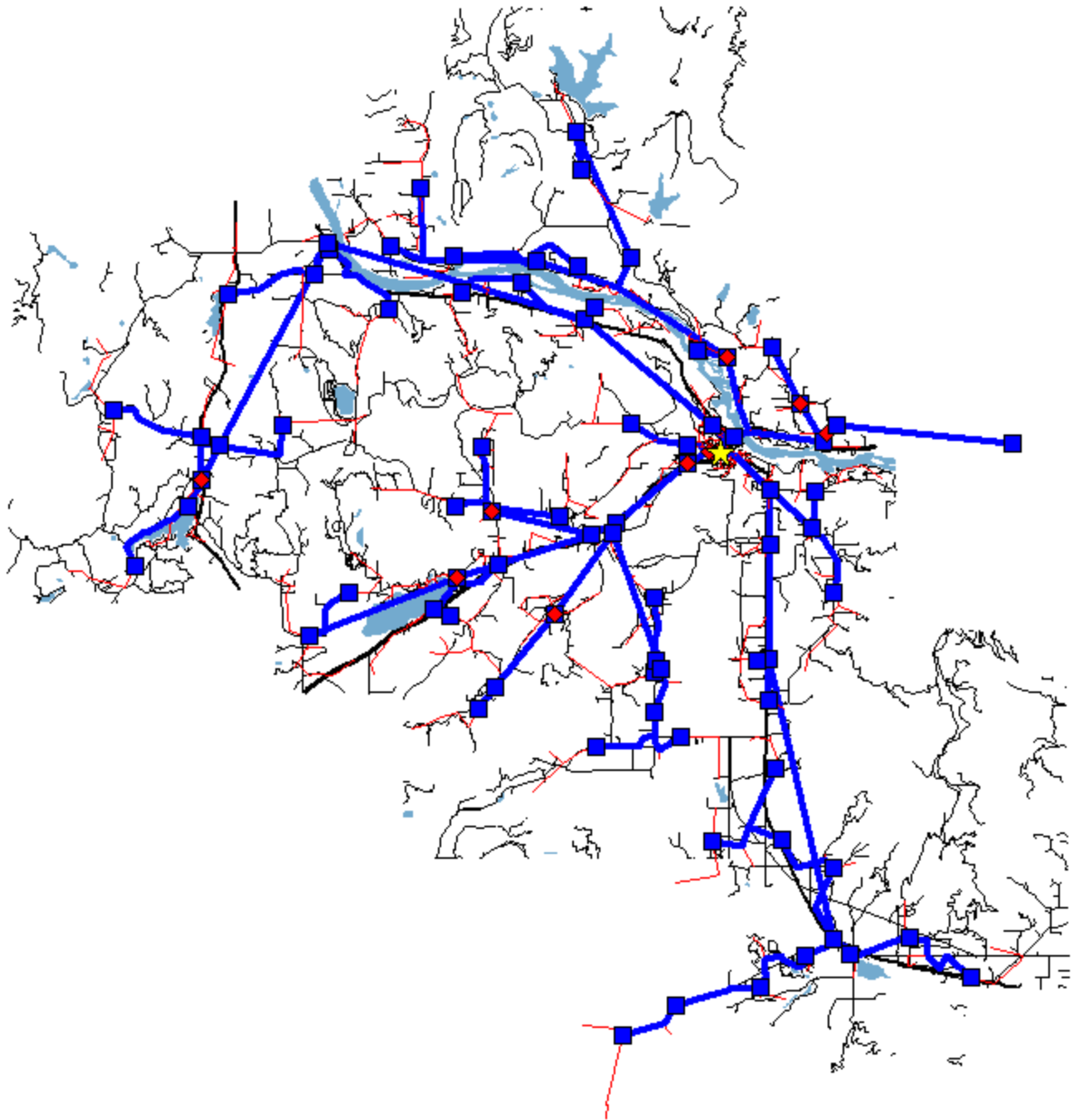
NCHSWAXX: VzCost Network



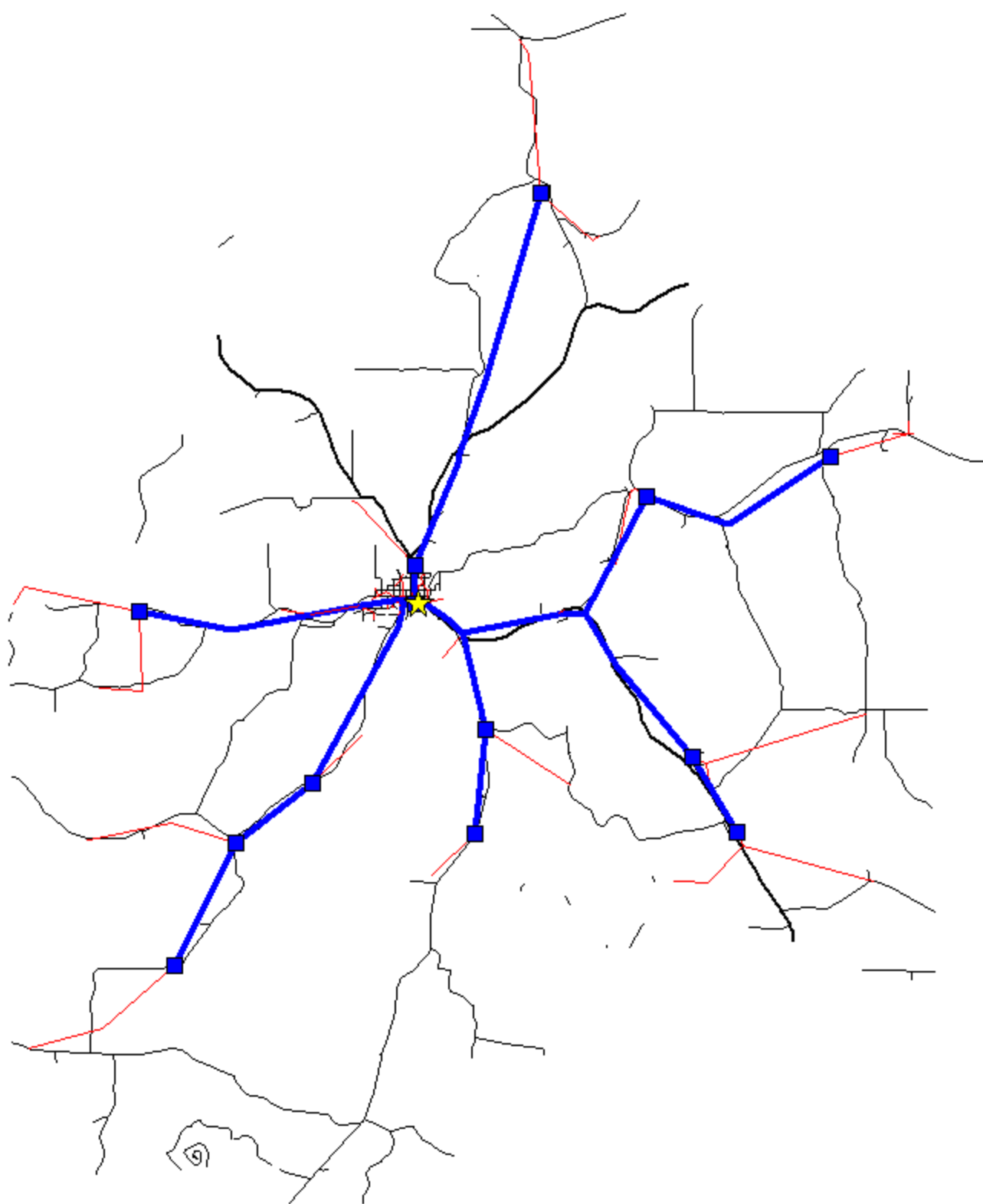
NILEWAXX: VzCost Network



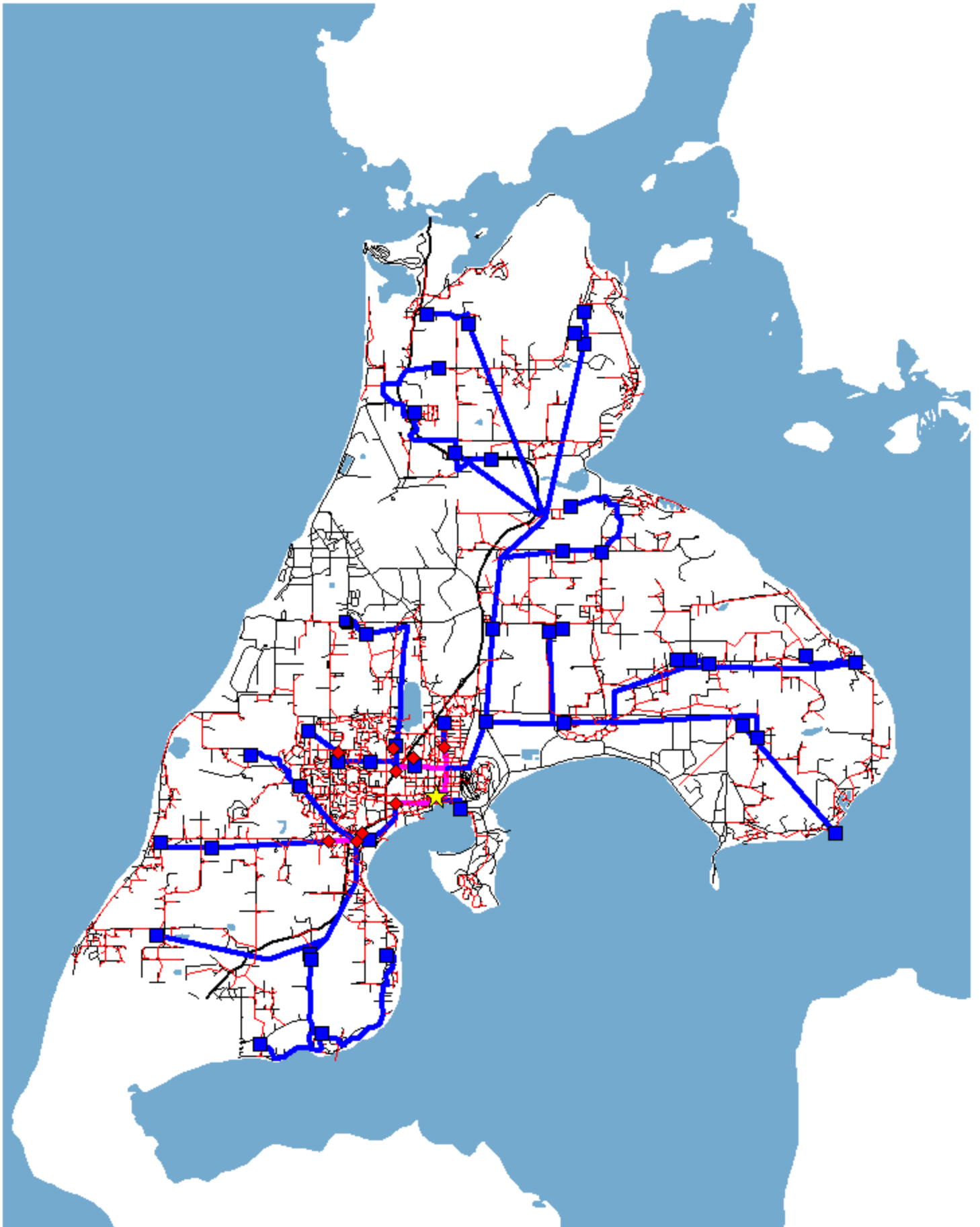
NWPTWAXX: VzCost Network



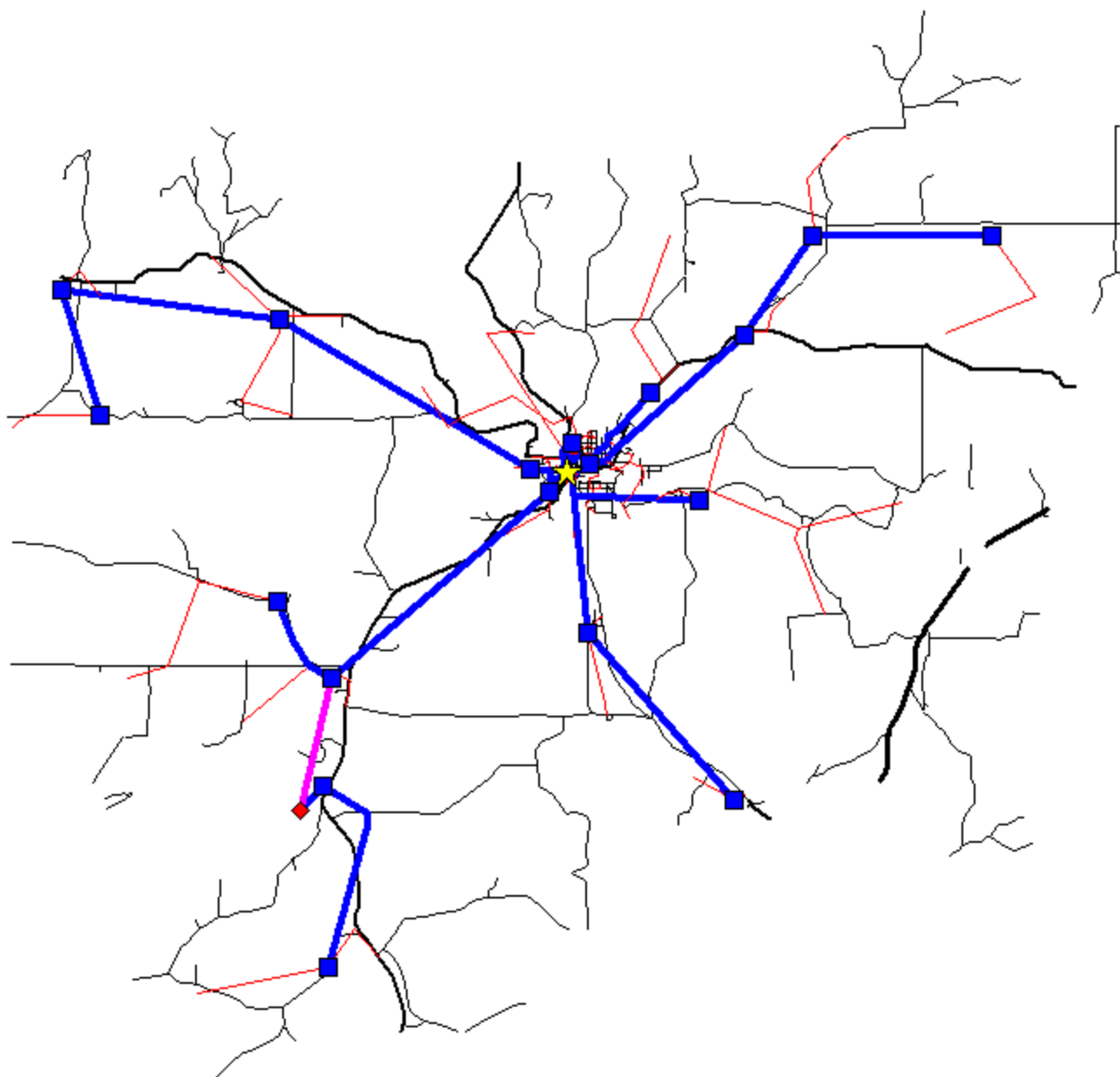
OKDLWAXX: VzCost Network



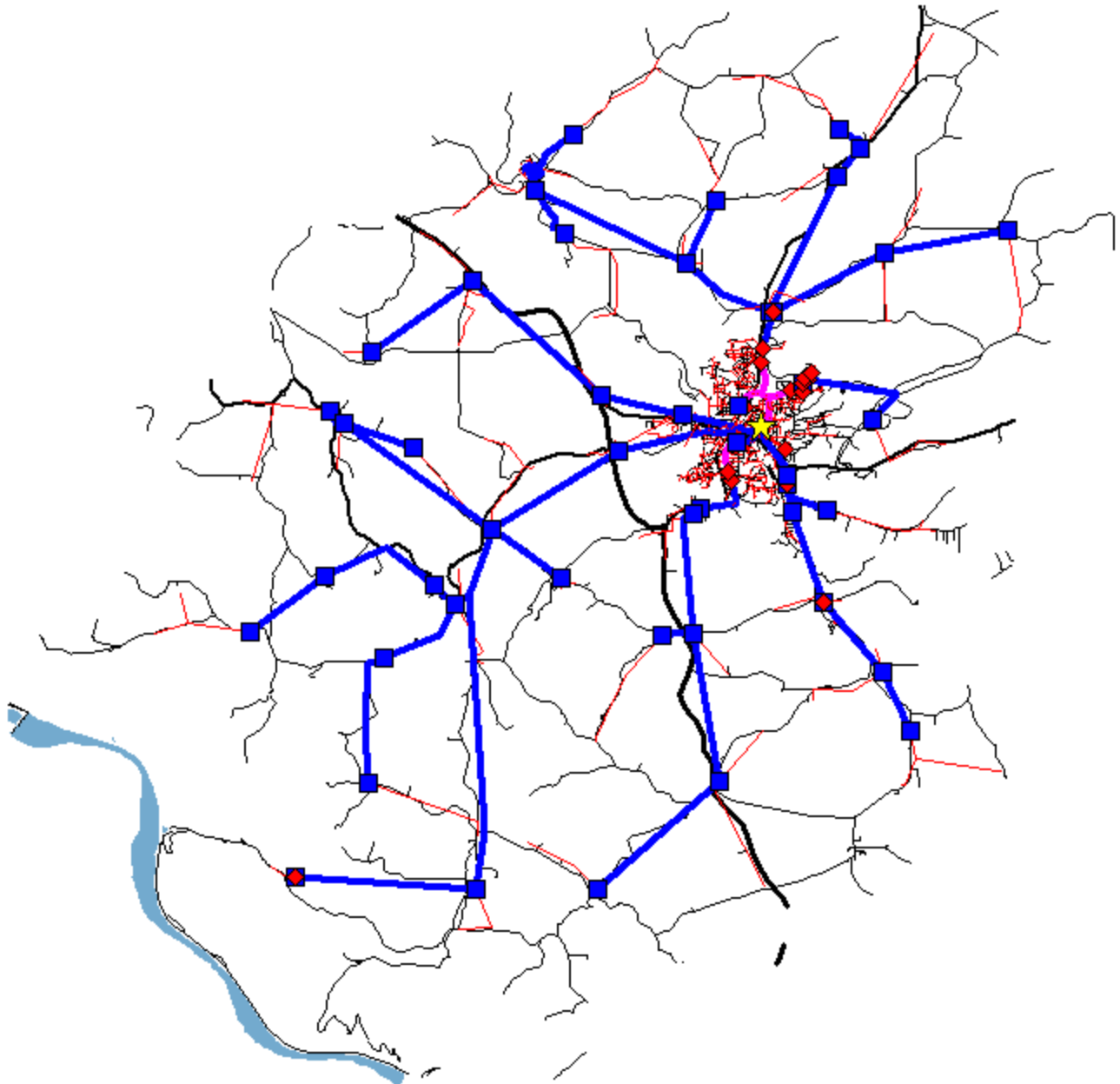
OKHRWAXX: VzCost Network



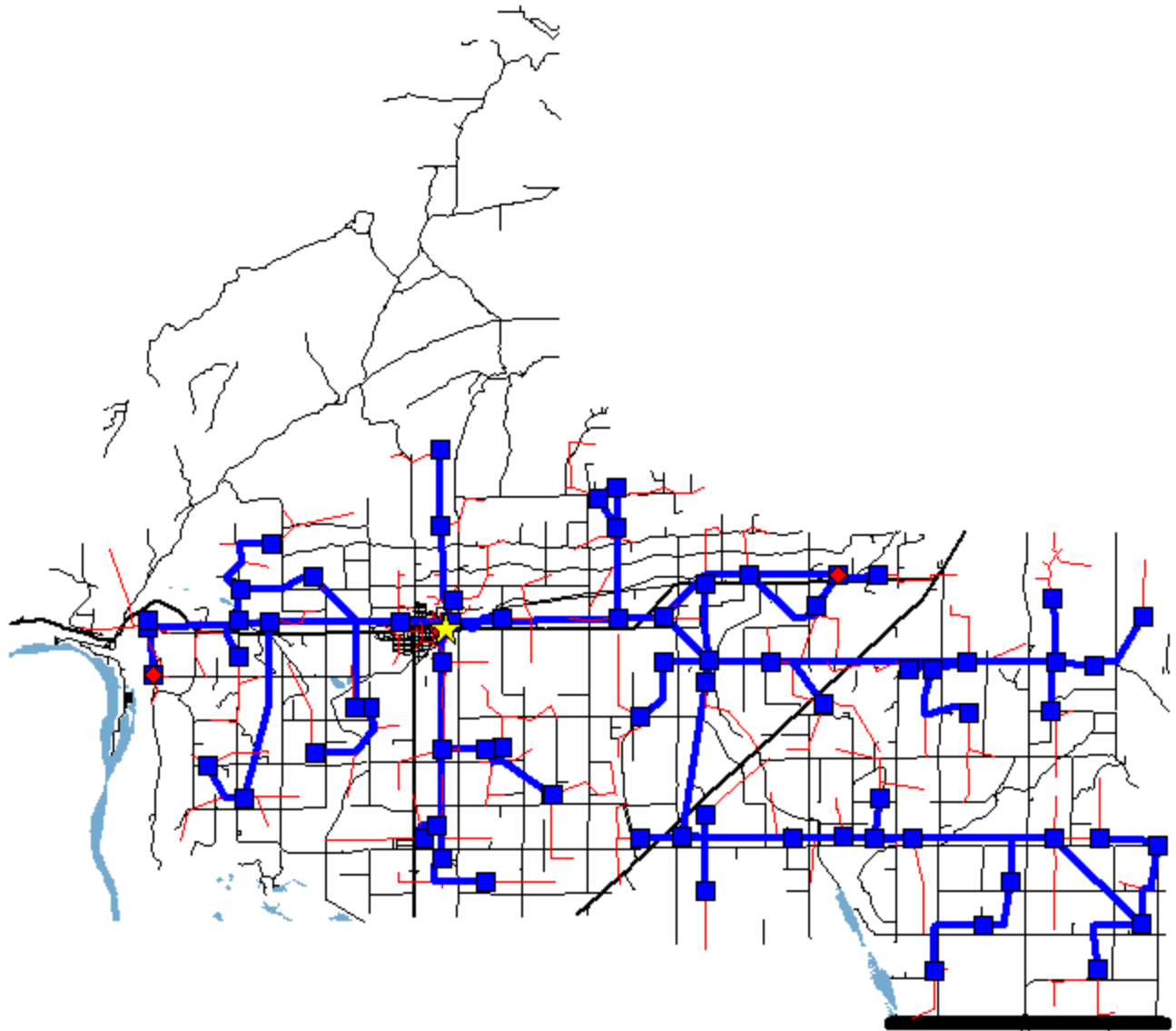
PALSWWAXX: VzCost Network



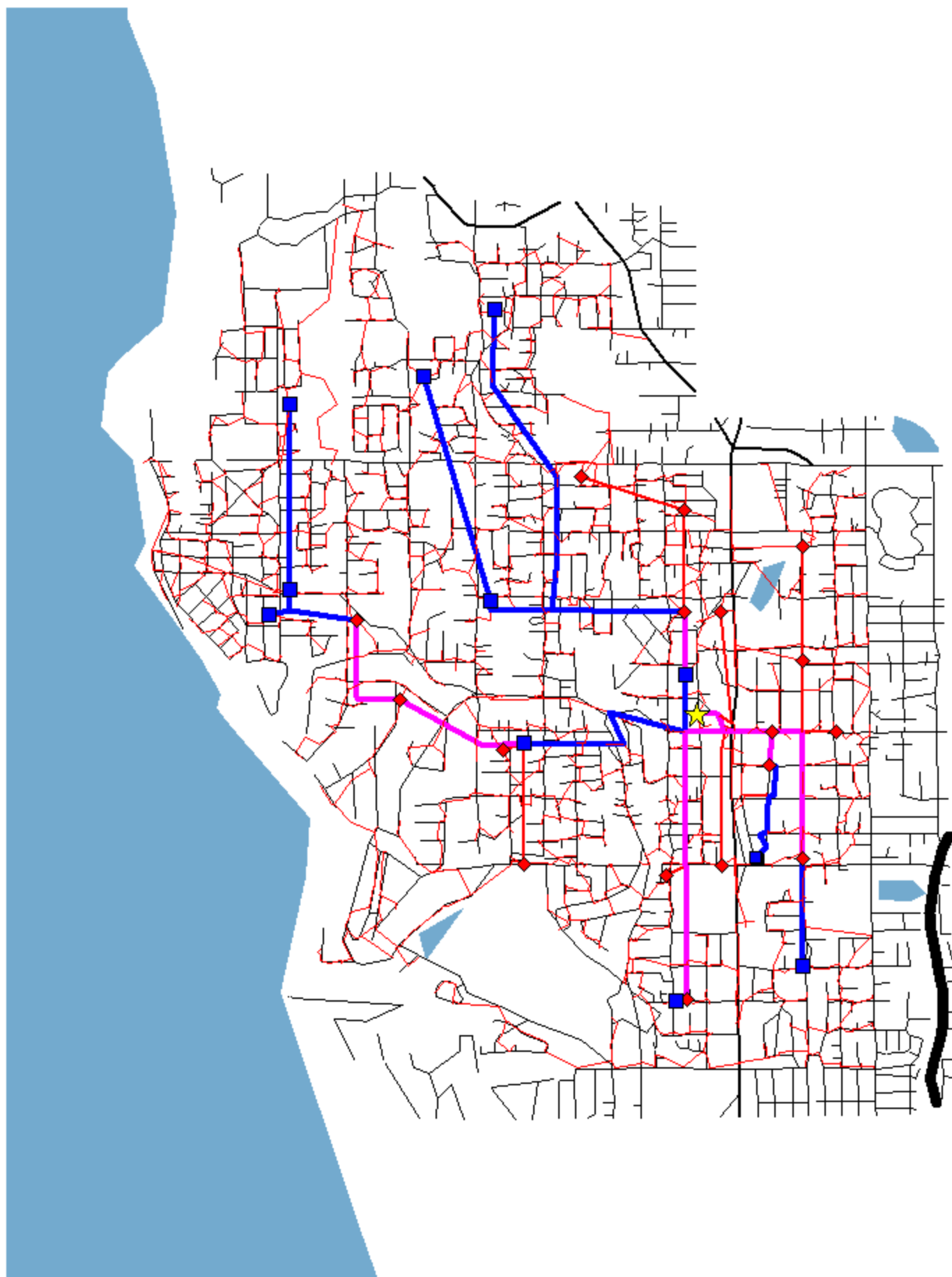
PLMNWAXX: VzCost Network



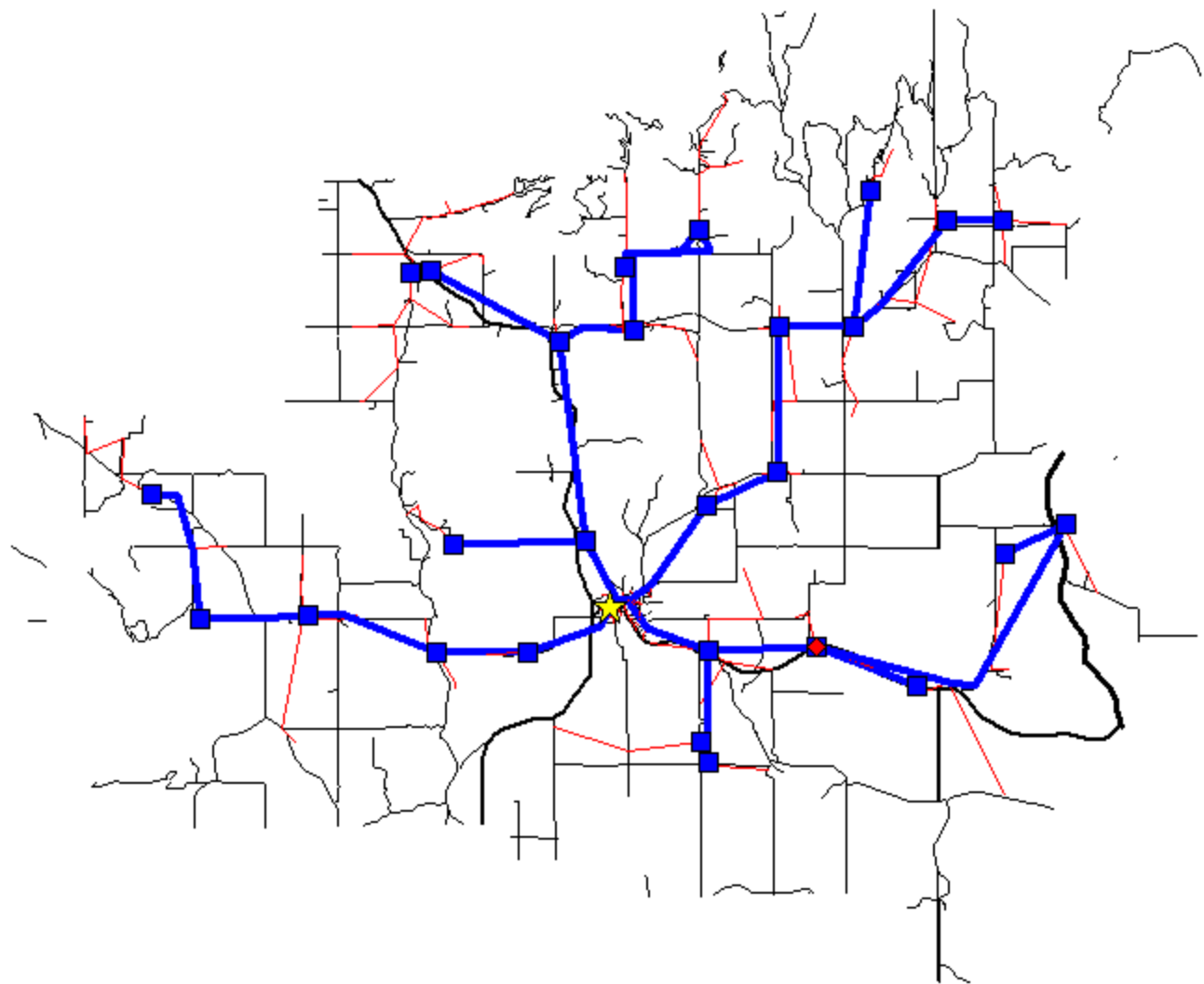
QNCYWAXX: VzCost Network



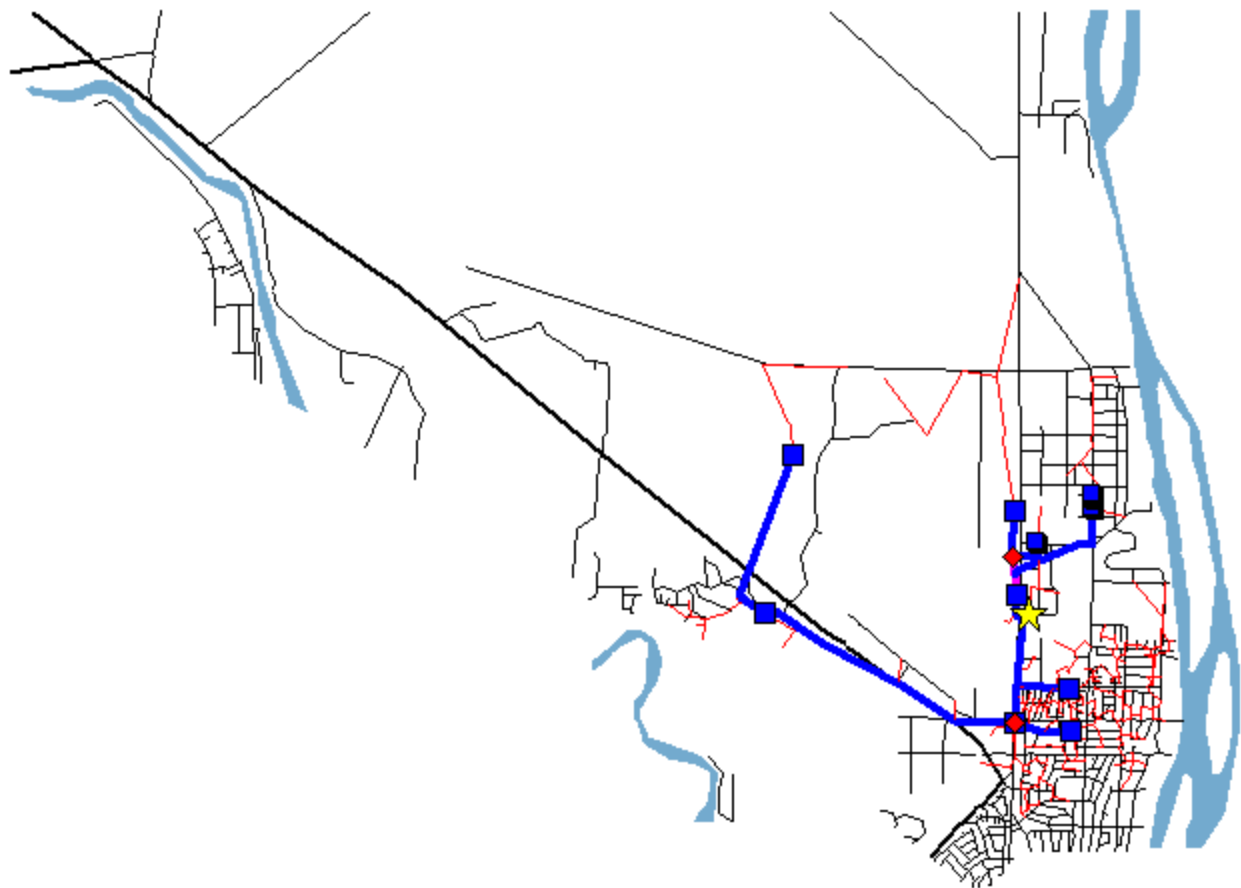
RCBHWAXX: VzCost Network



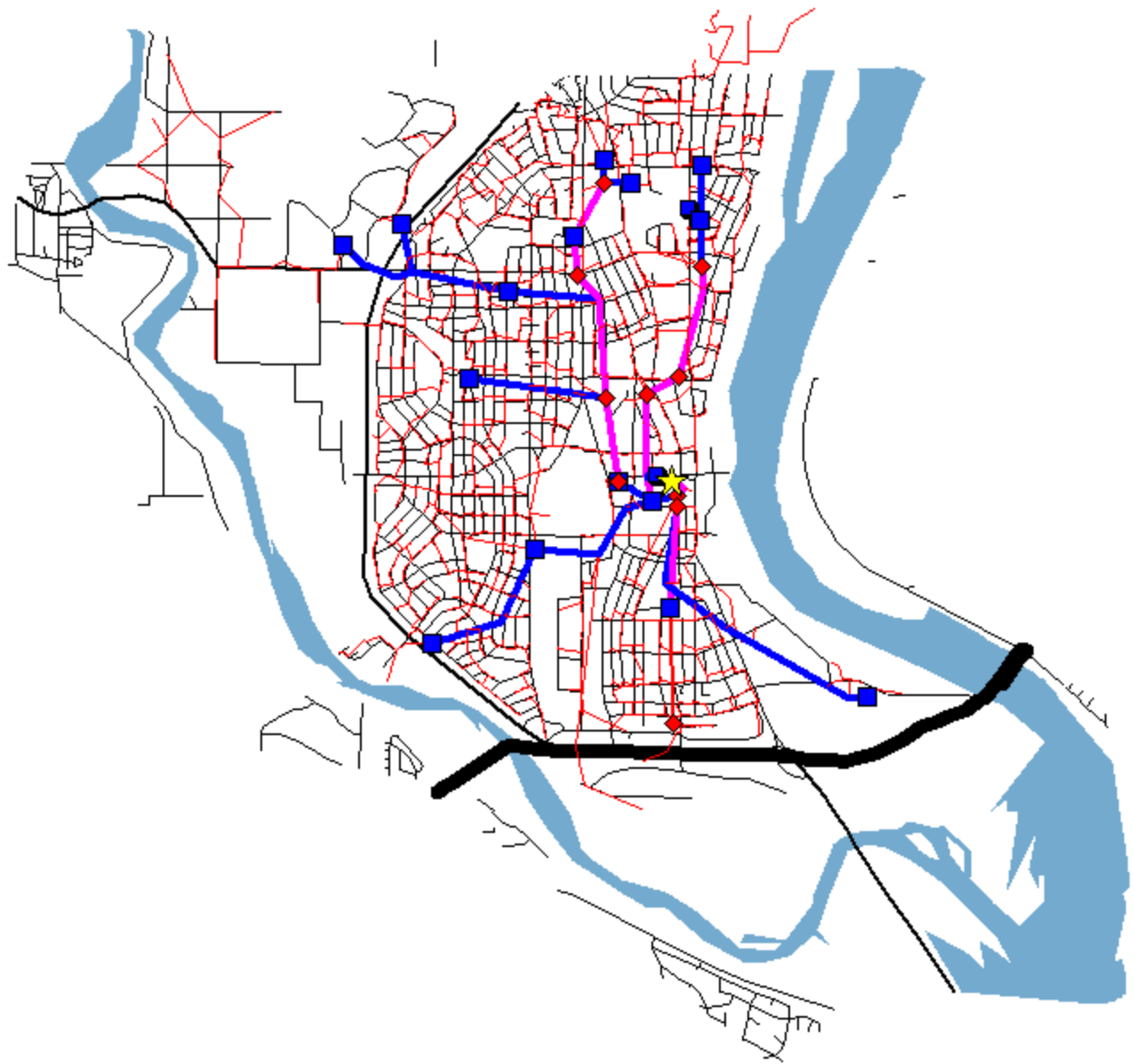
RCFRWAXB: VzCost Network



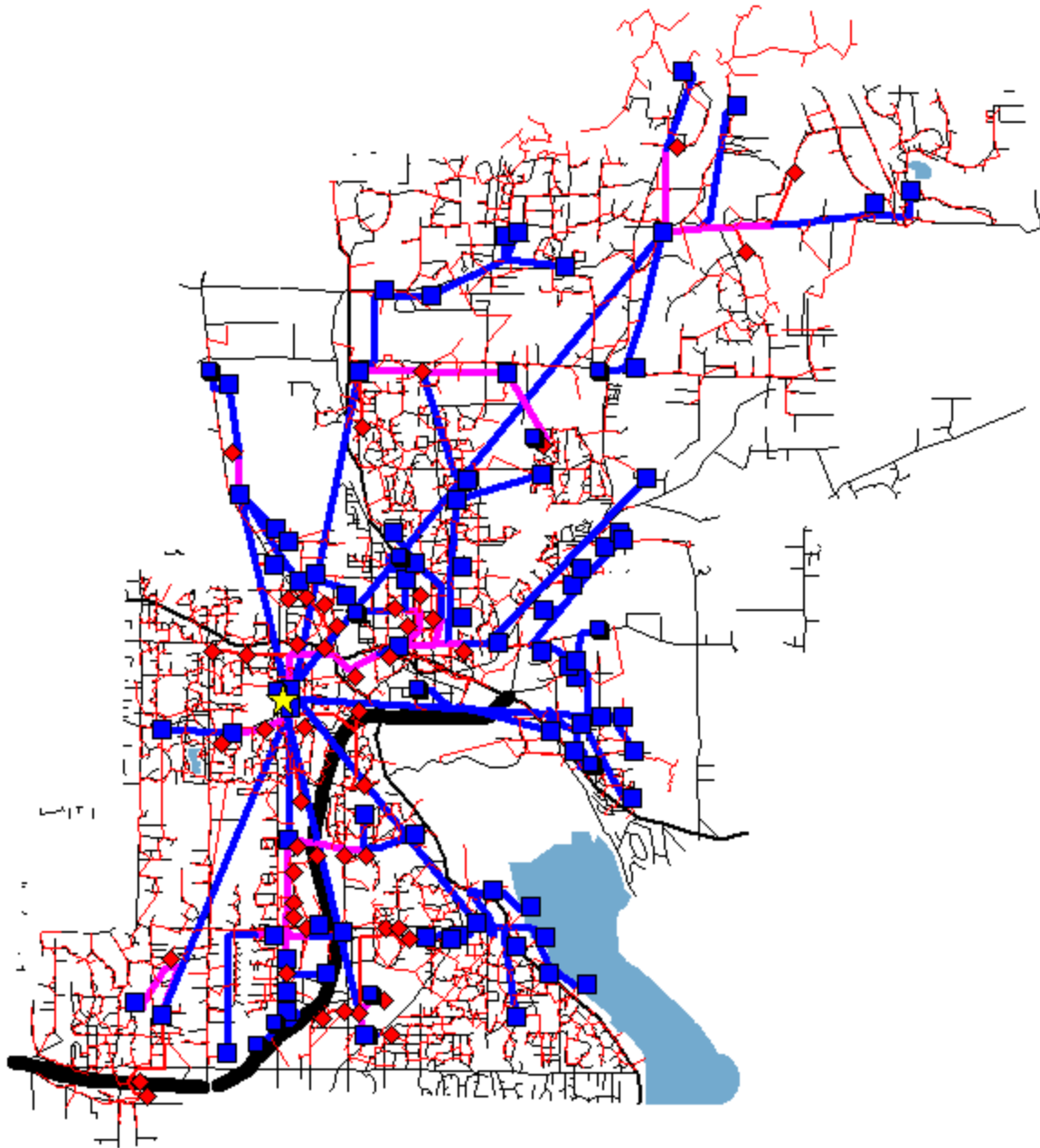
RCLDWAXA: VzCost Network



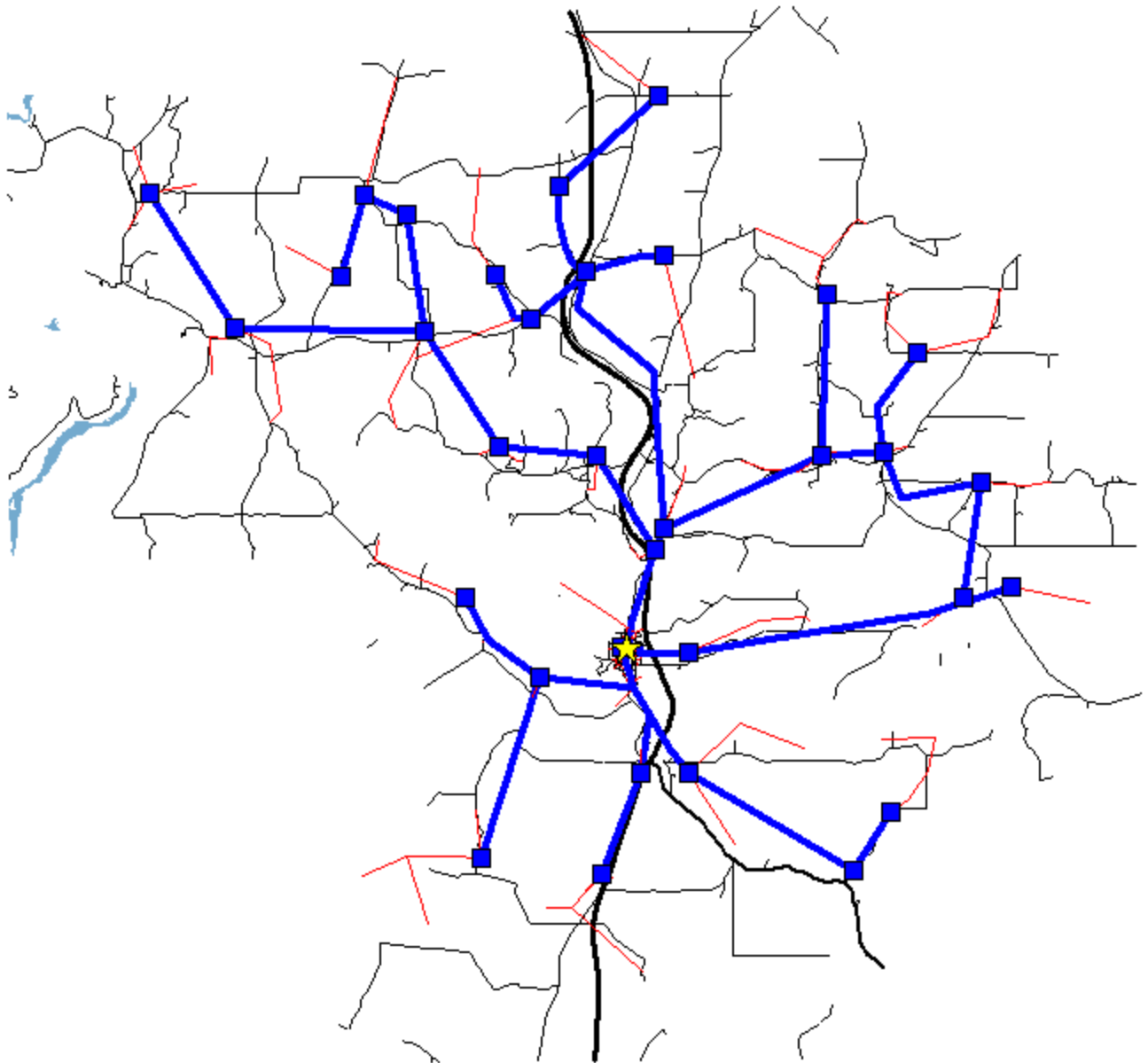
RCLDWAXB: VzCost Network



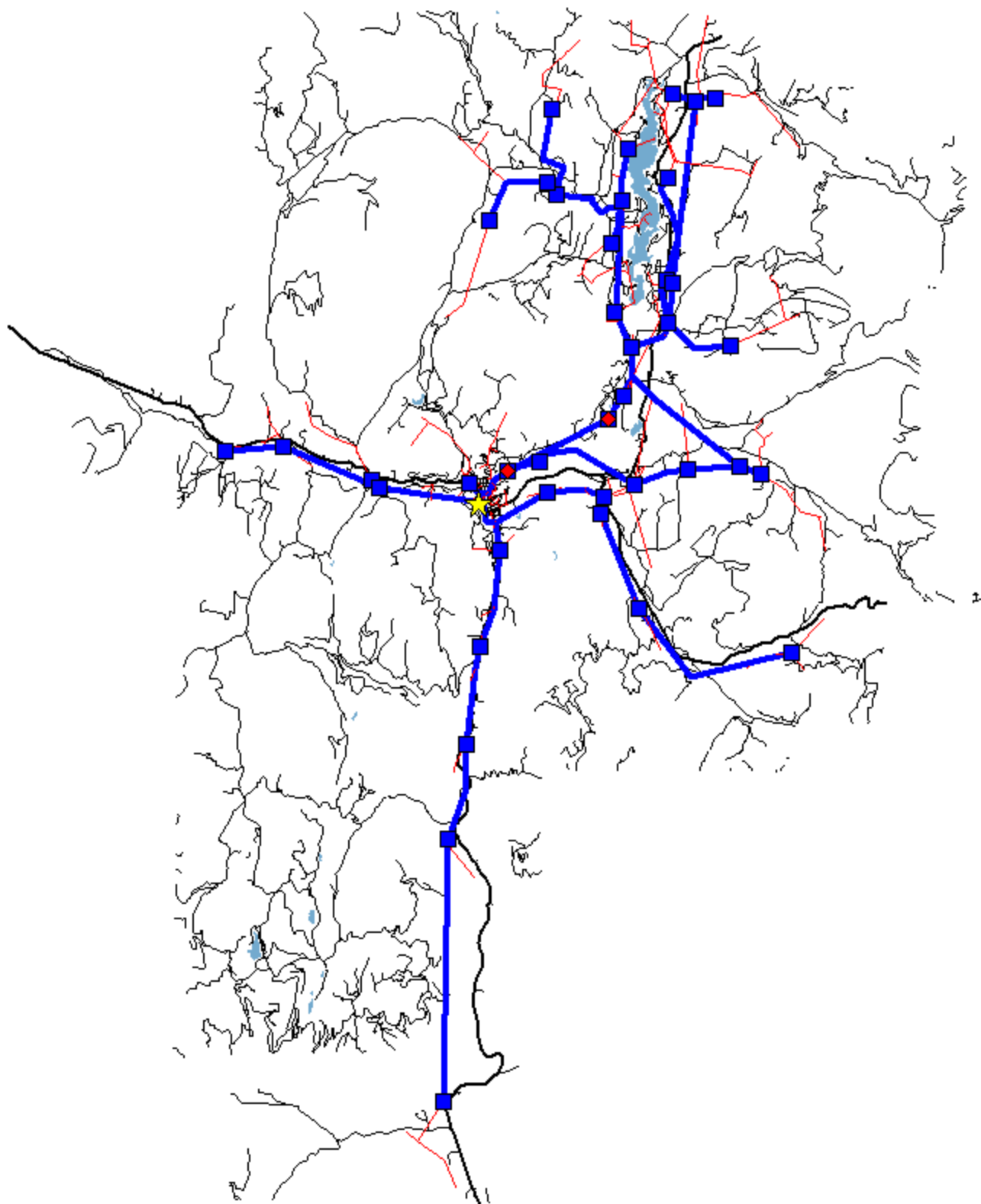
RDMDWAXA: VzCost Network



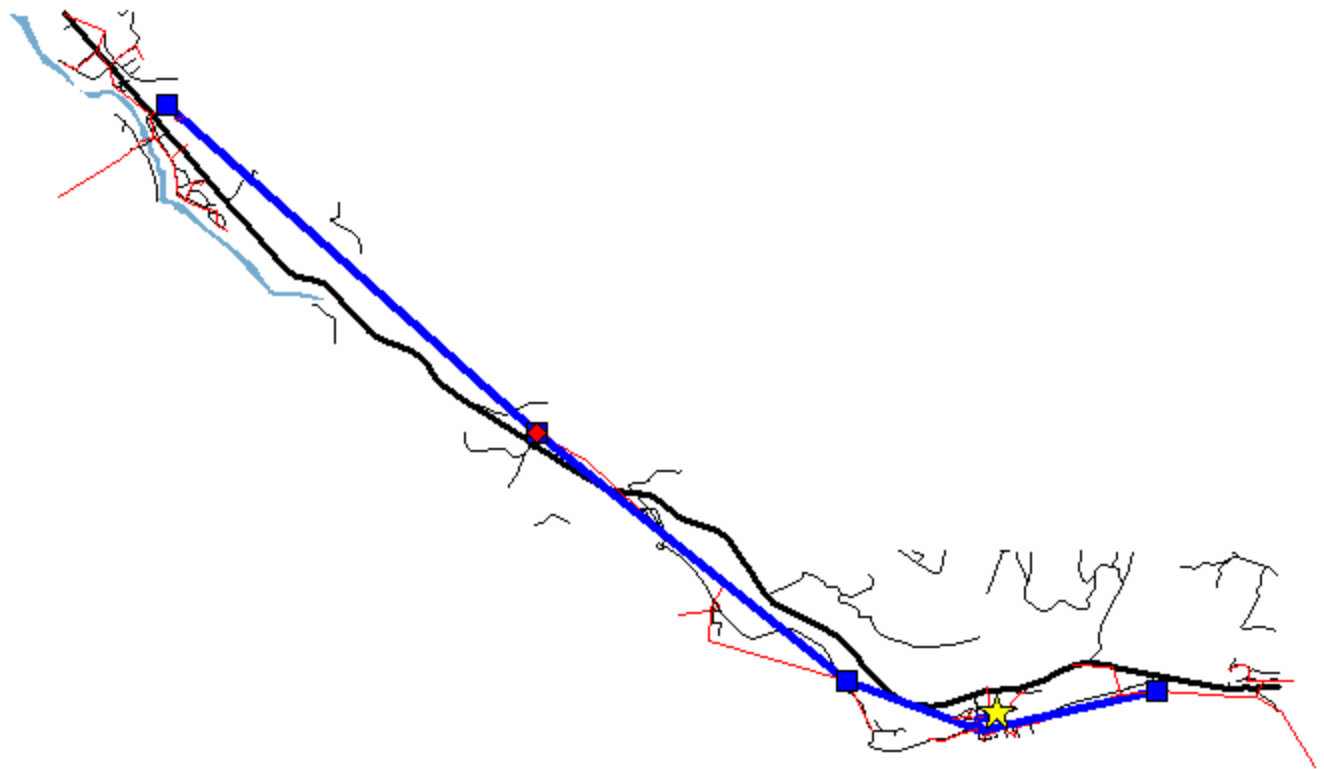
ROSLWAXA: VzCost Network



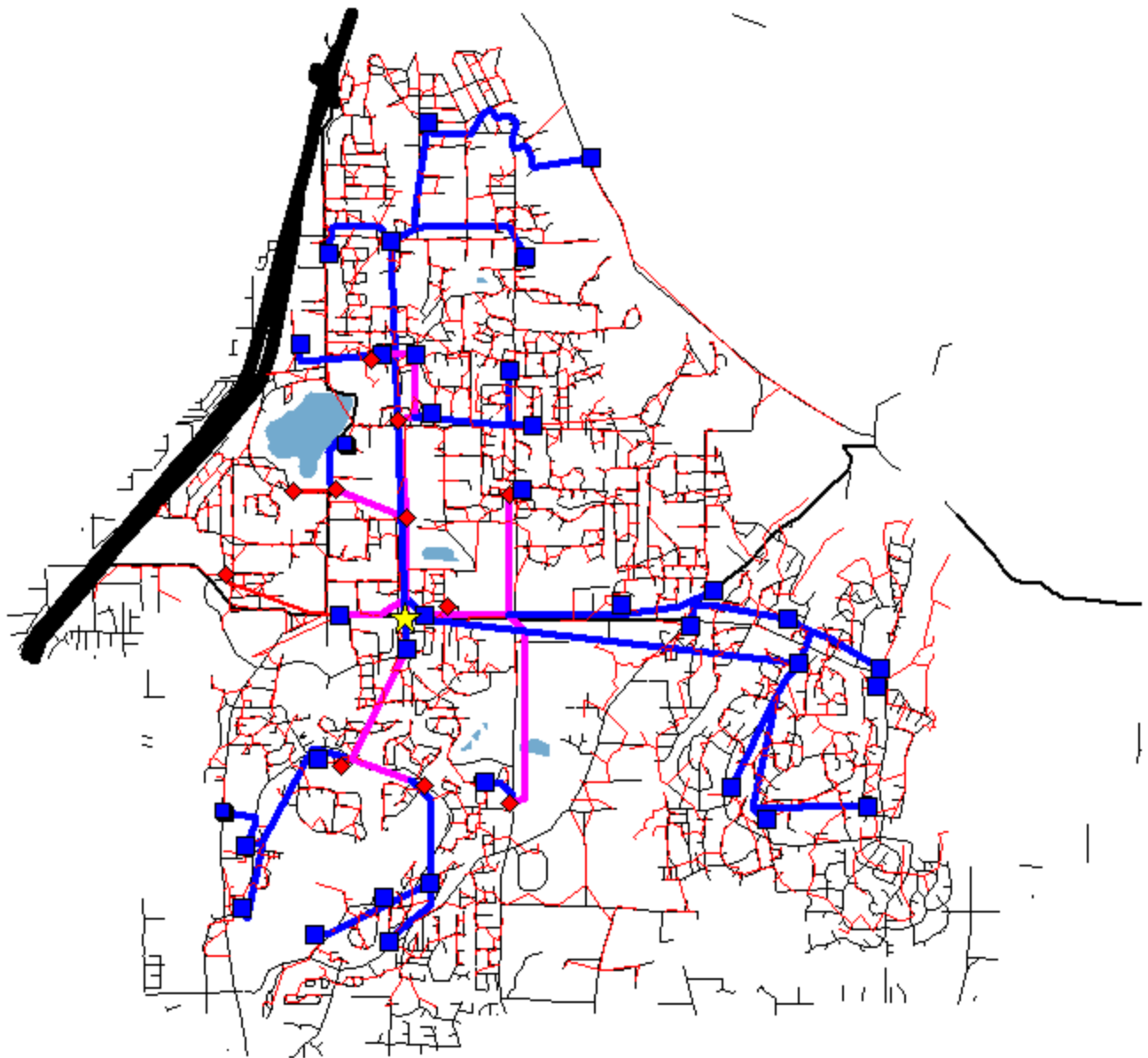
RPBLWAXA: VzCost Network



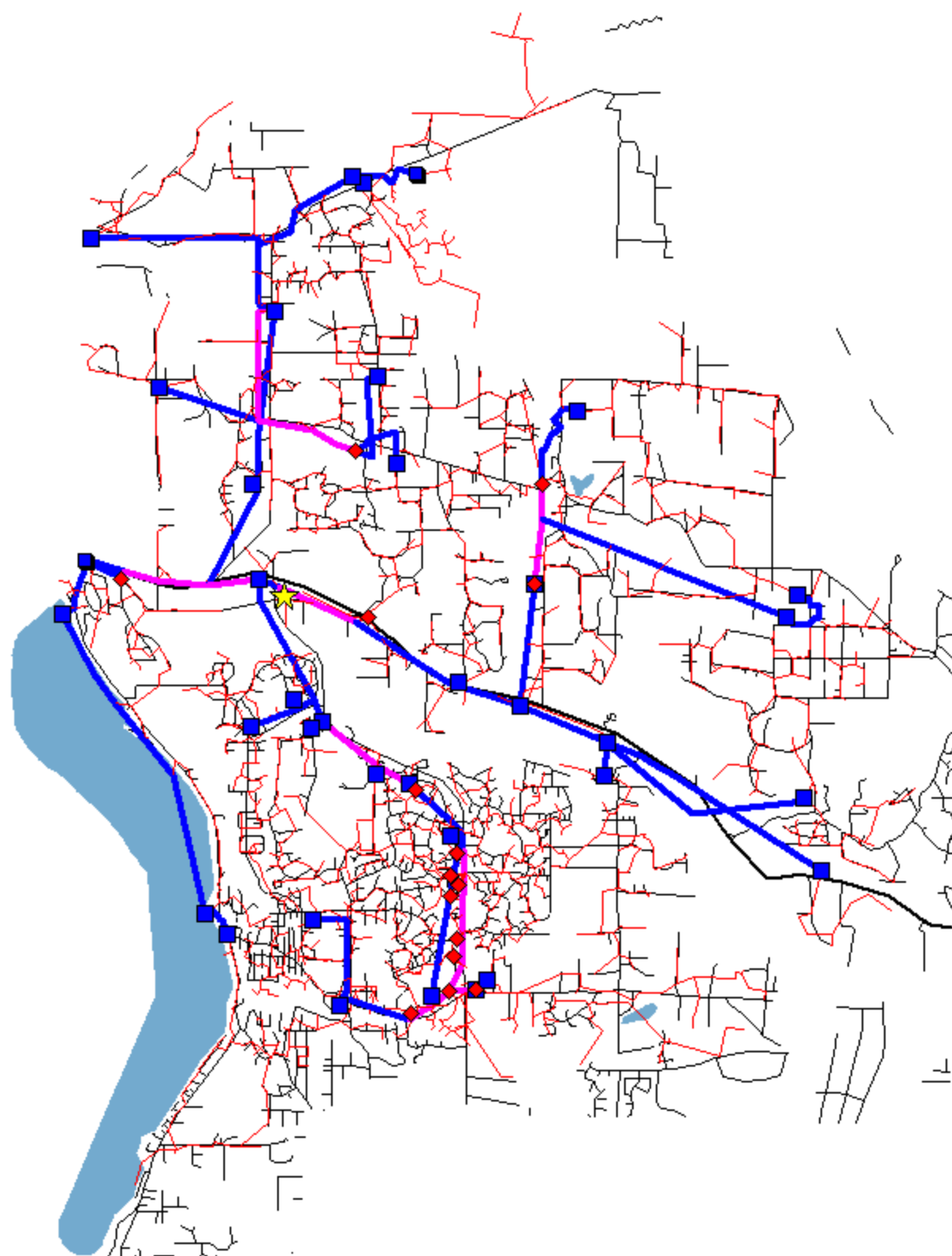
SKYKWAXX: VzCost Network



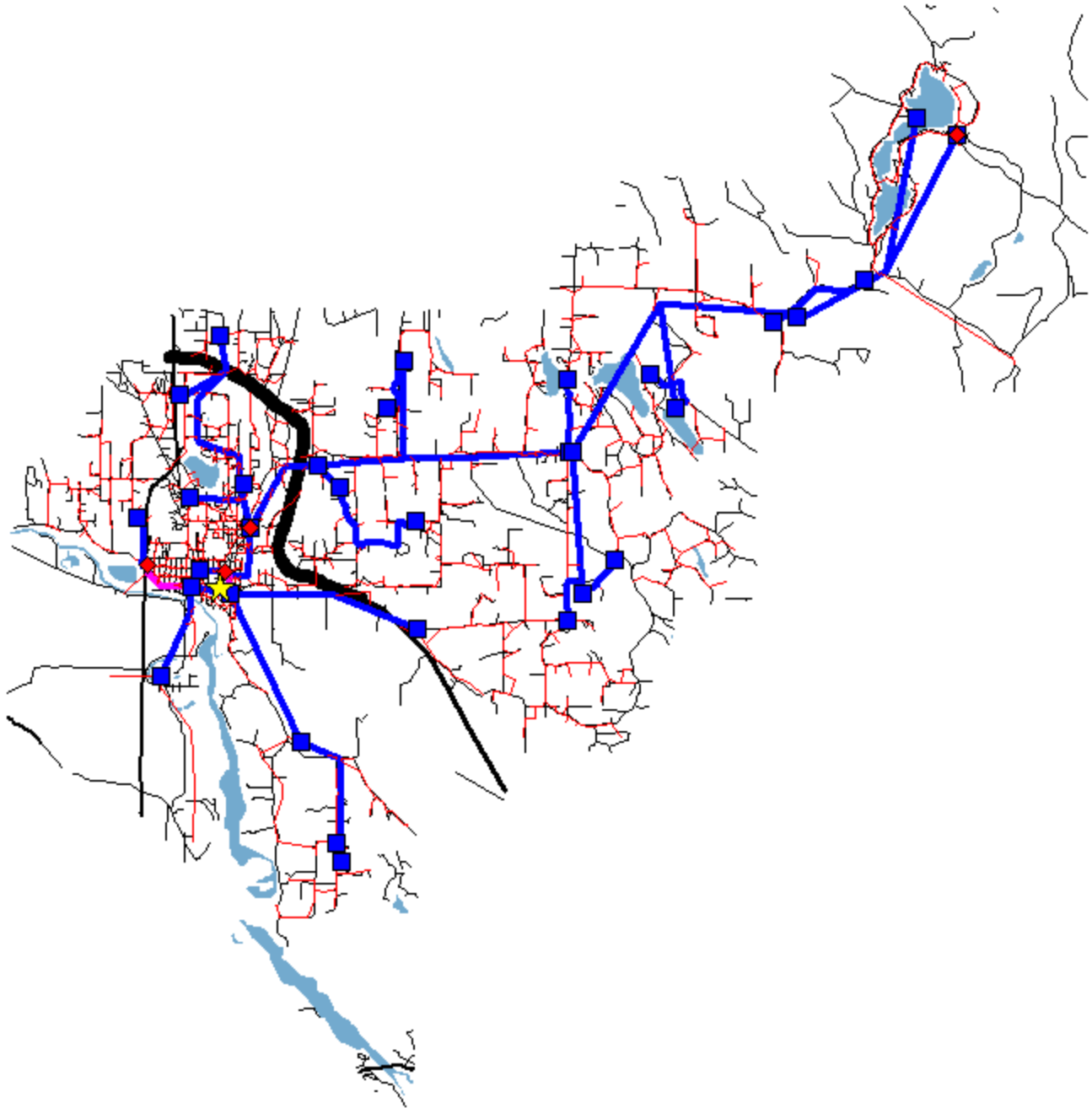
SLLKWAXA: VzCost Network



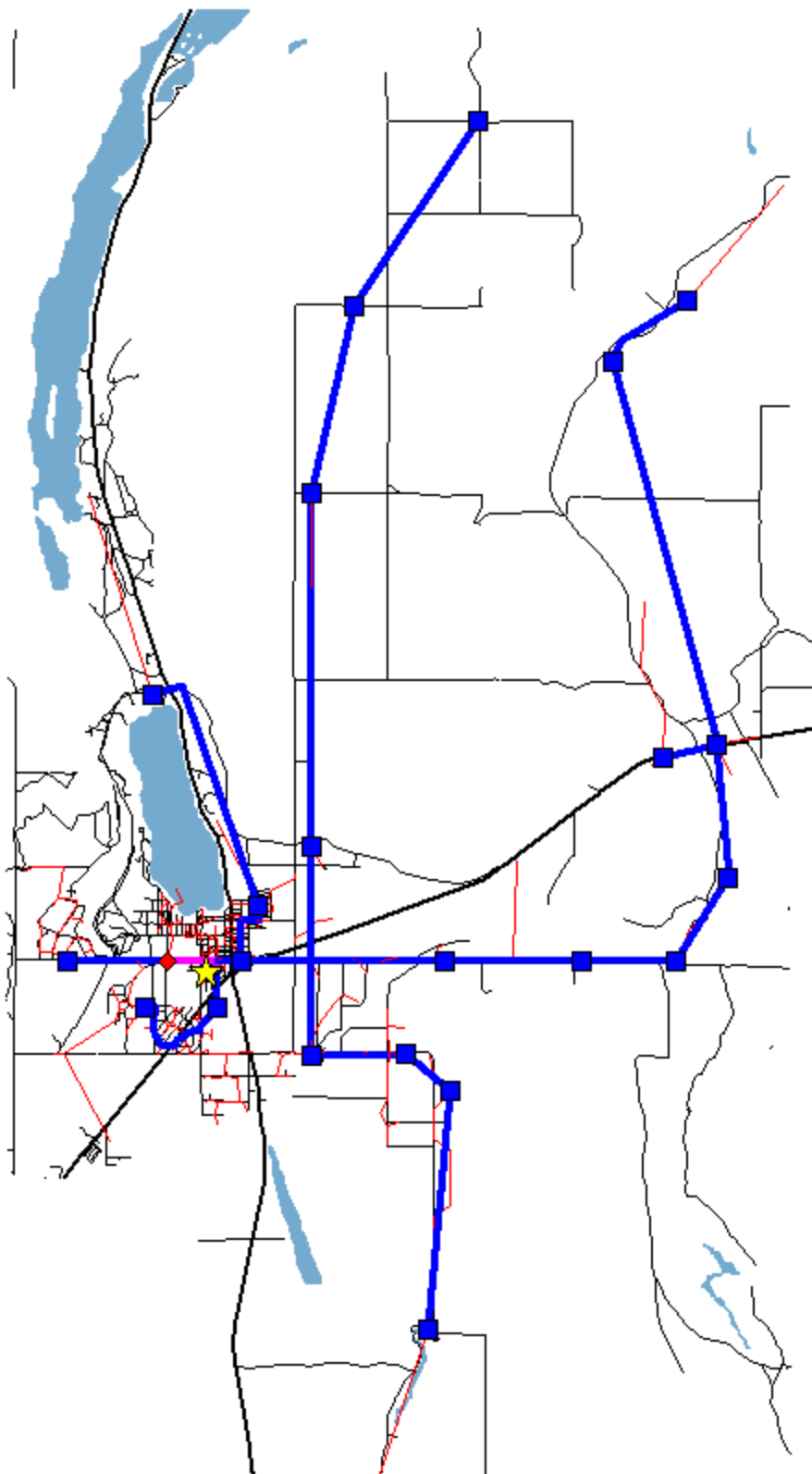
SMSHWAXA: VzCost Network



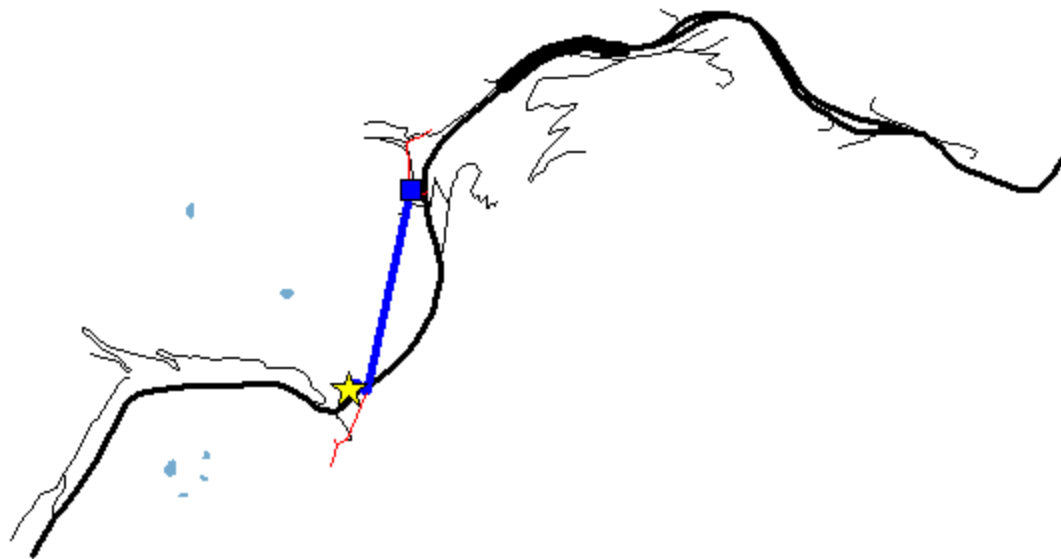
SNHSWAXX: VzCost Network



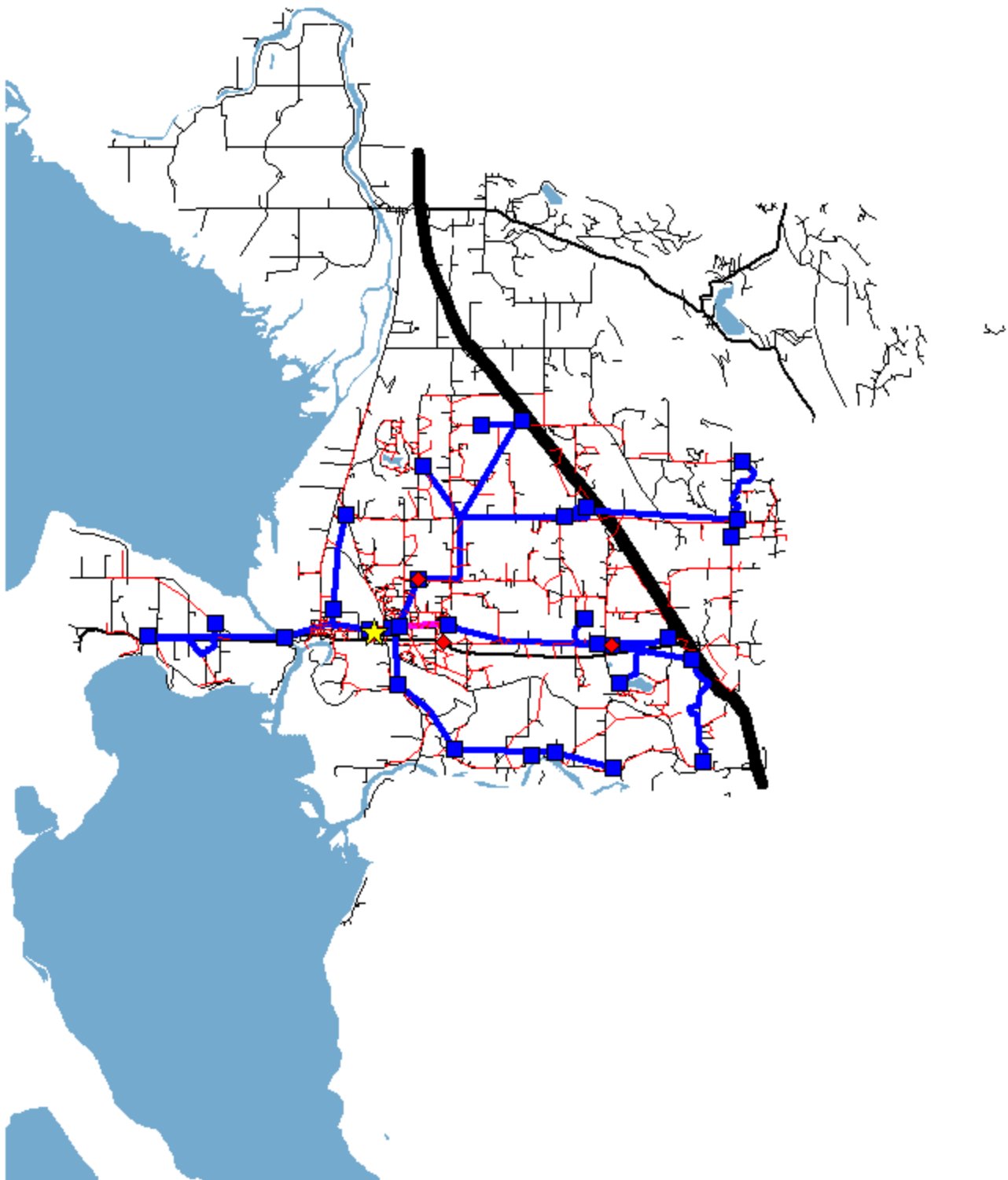
SOLKWAXX: VzCost Network



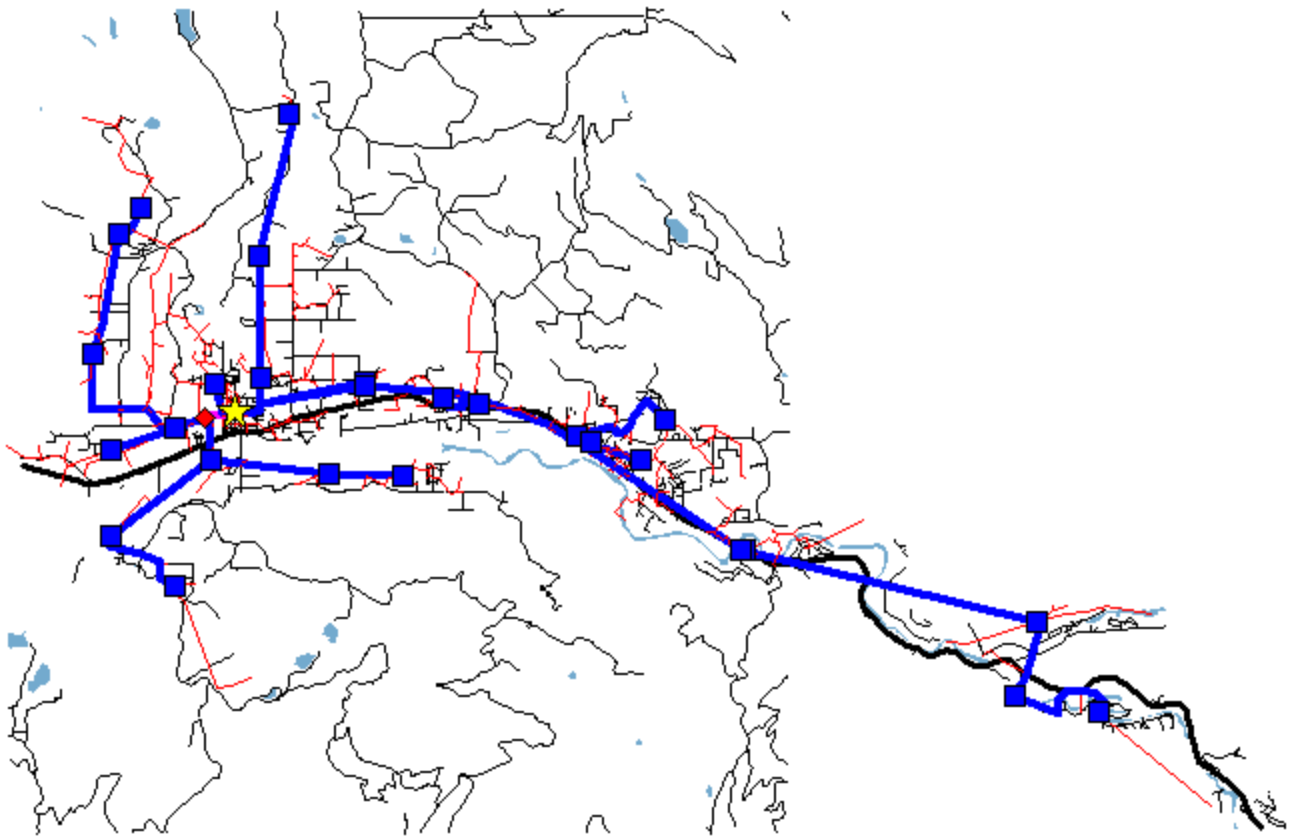
STPSWAXA: VzCost Network



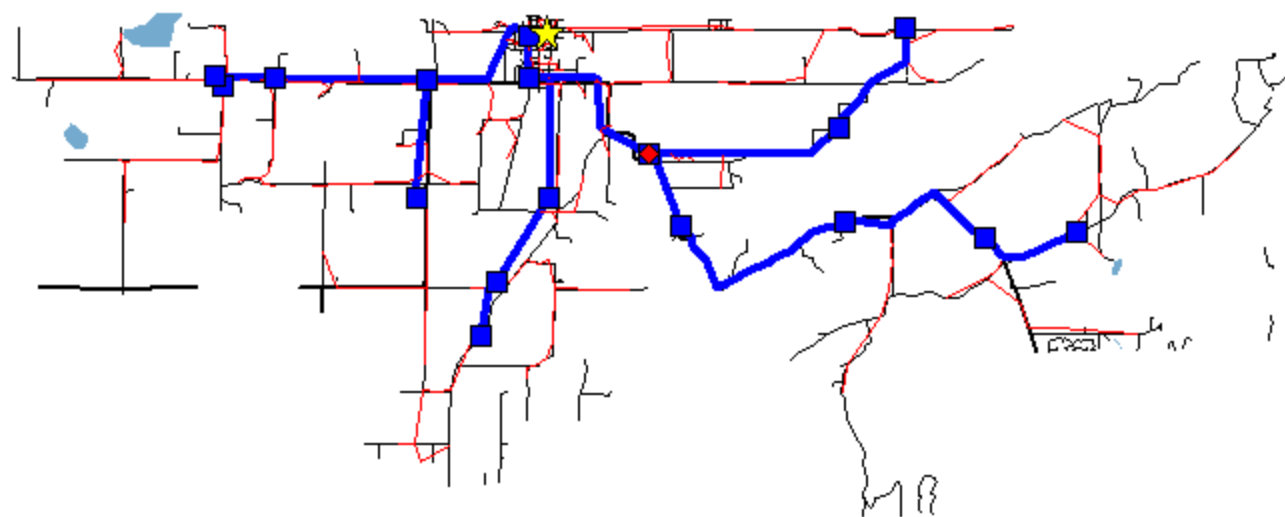
STWDWAXX: VzCost Network



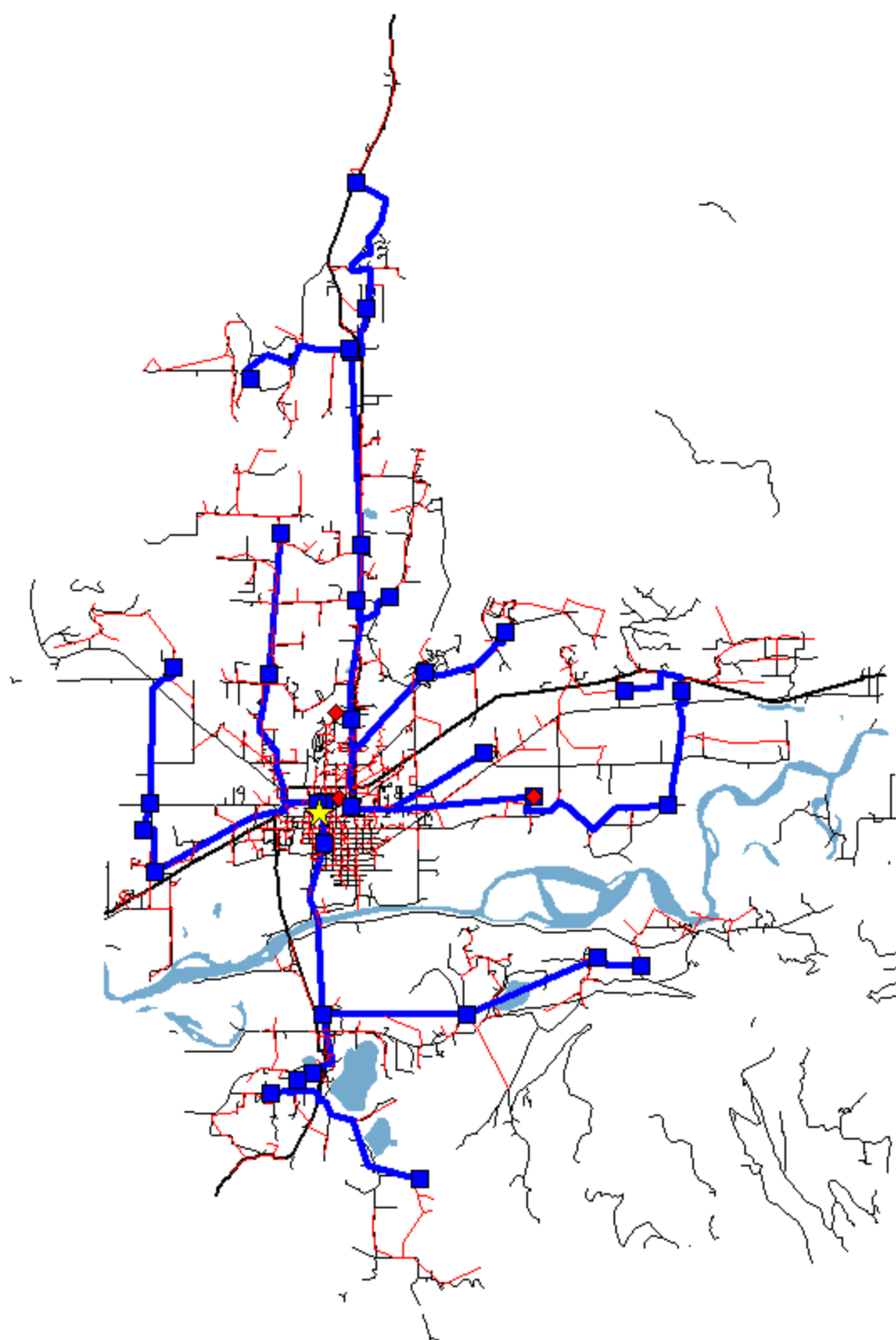
SULTWAXX: VzCost Network



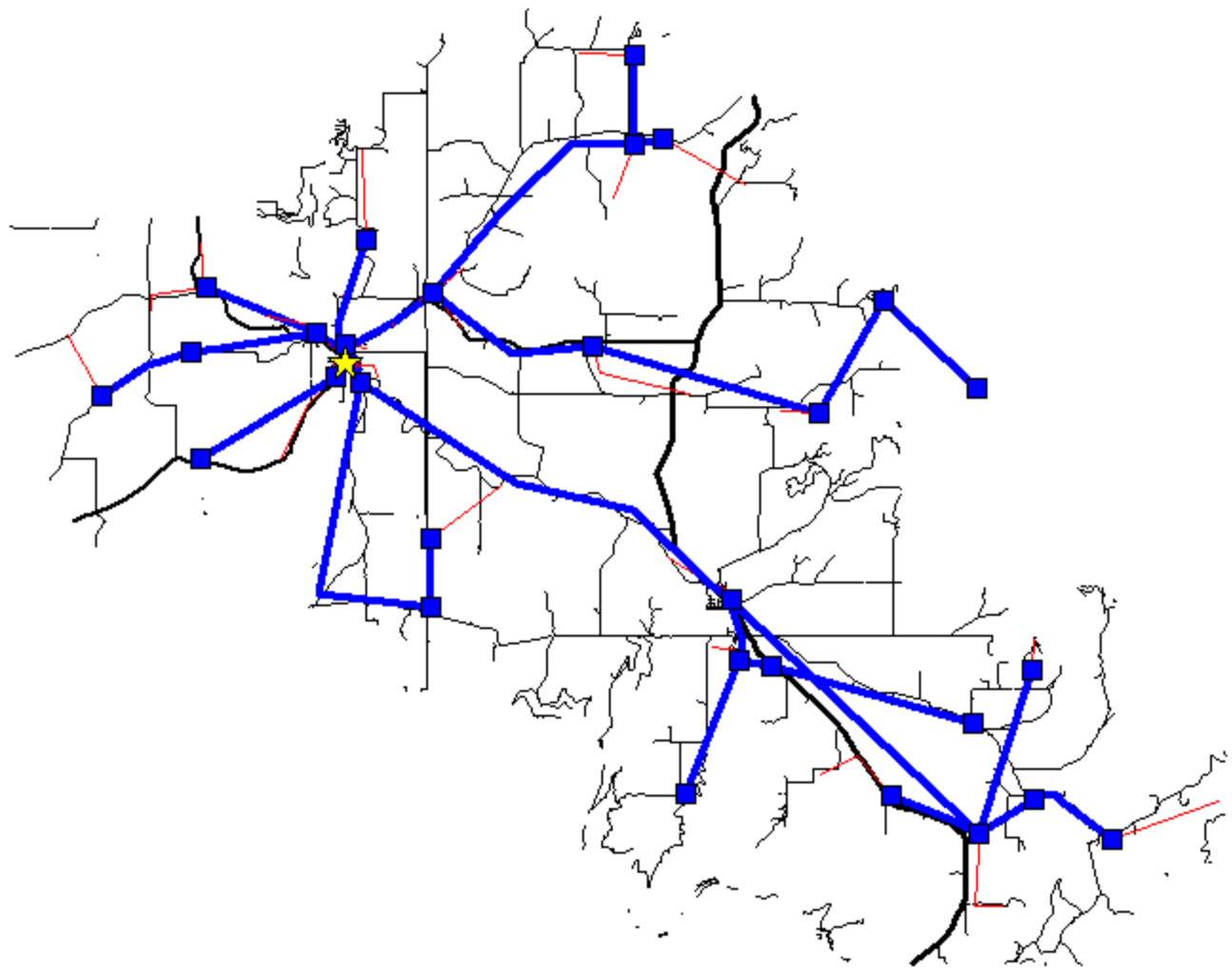
SUMSWAXX: VzCost Network



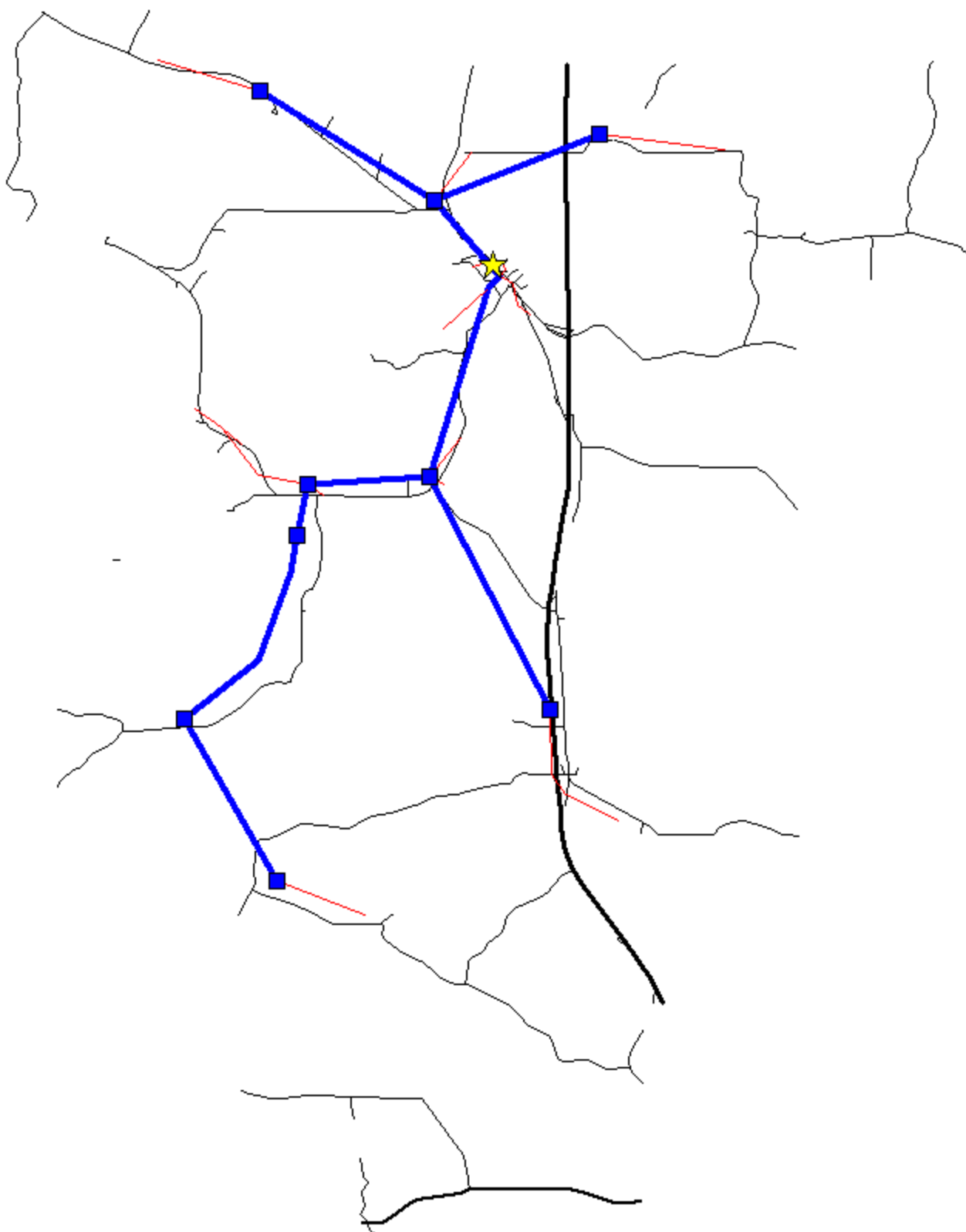
SWLYWAXA: VzCost Network



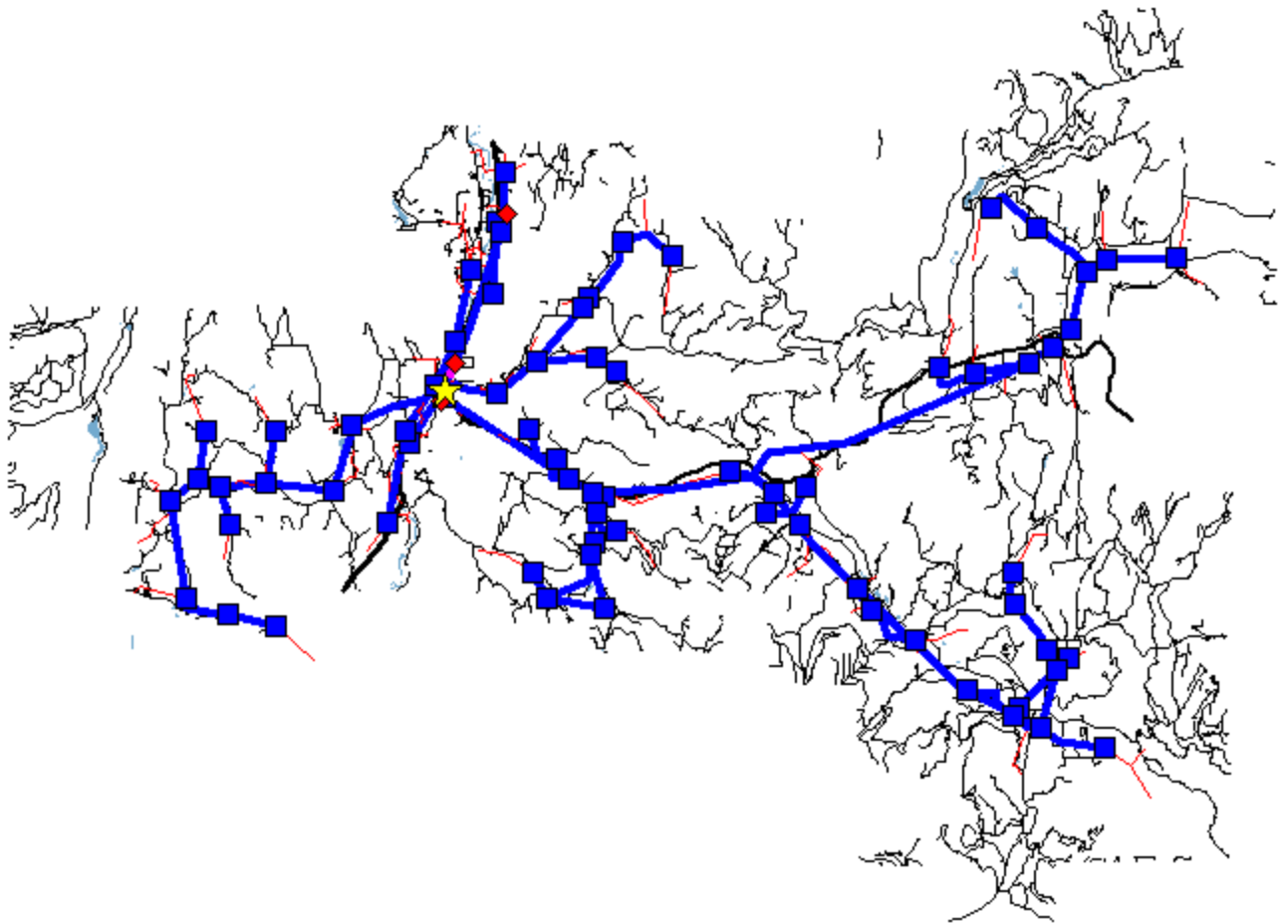
TEKOWAXX: VzCost Network



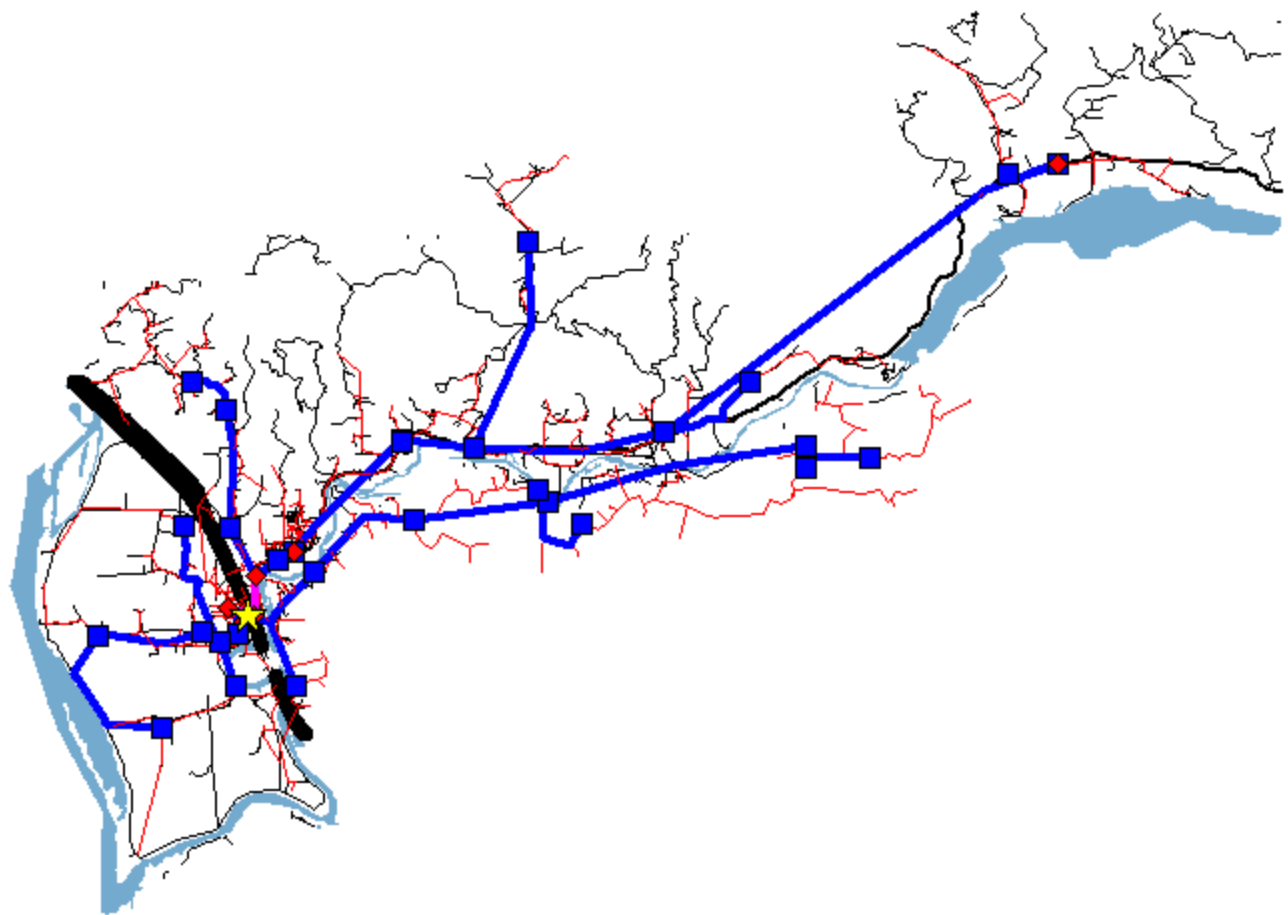
THTNWAXA: VzCost Network



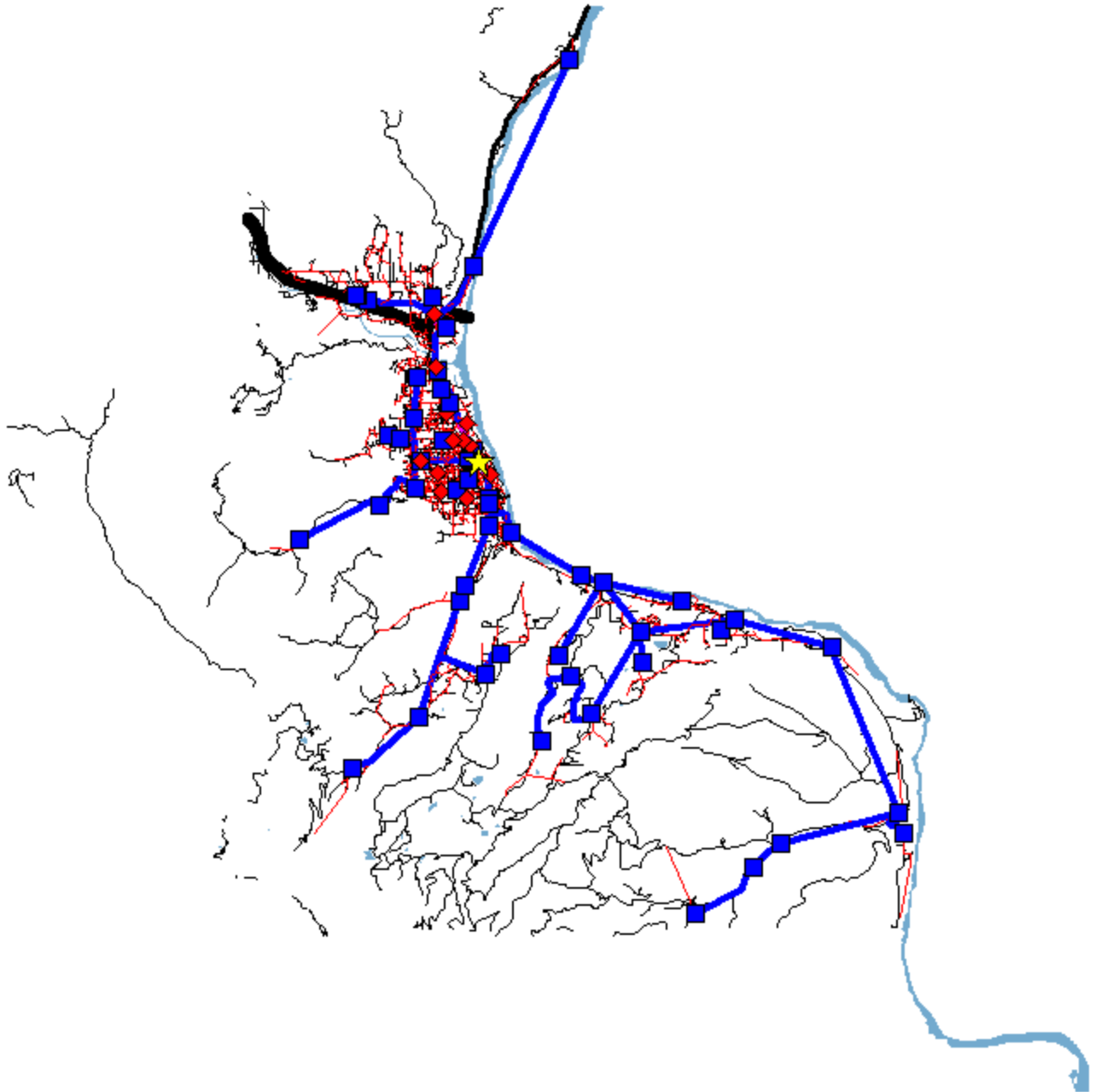
TNSKWAXA: VzCost Network



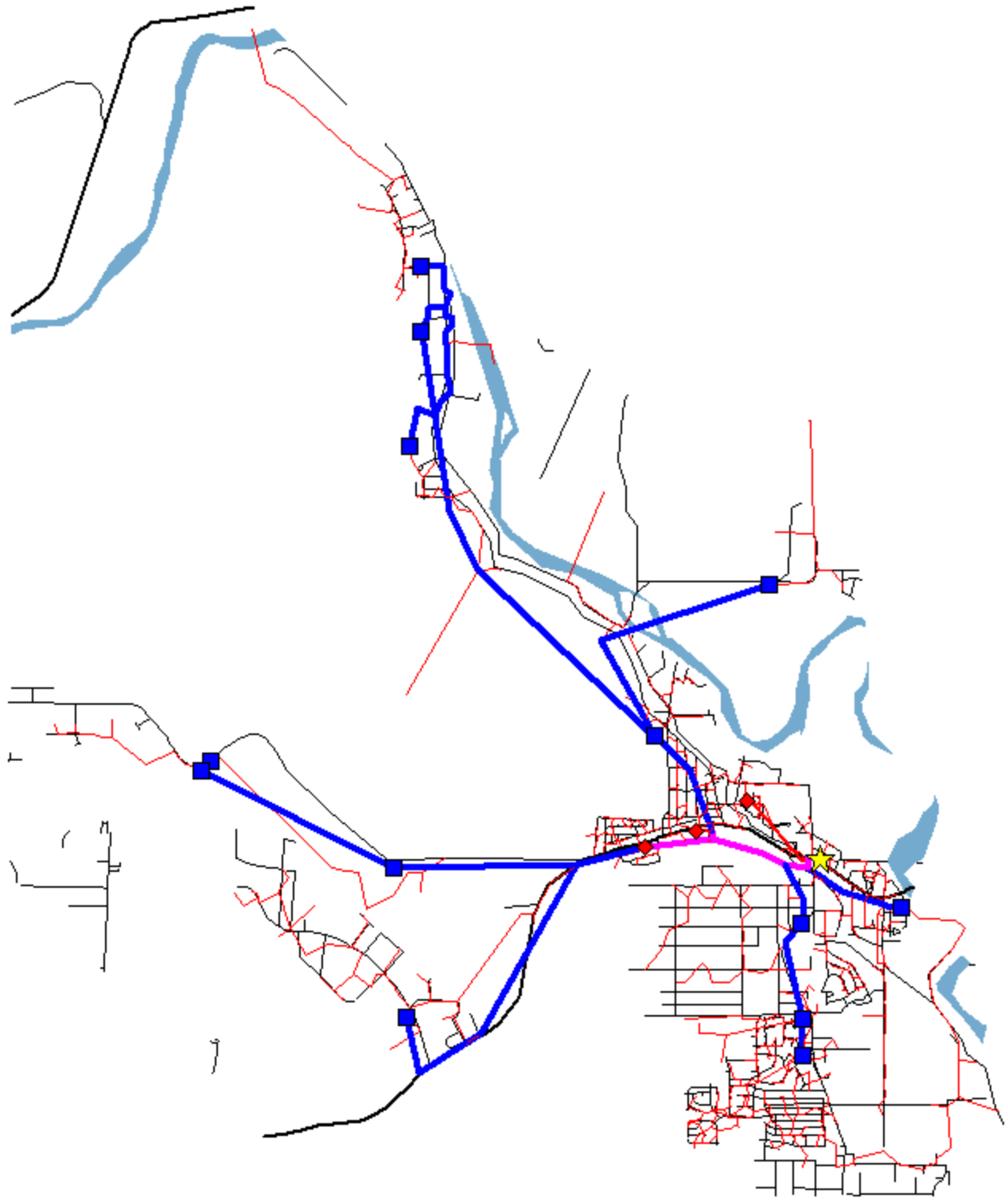
WDLDWAXA: VzCost Network



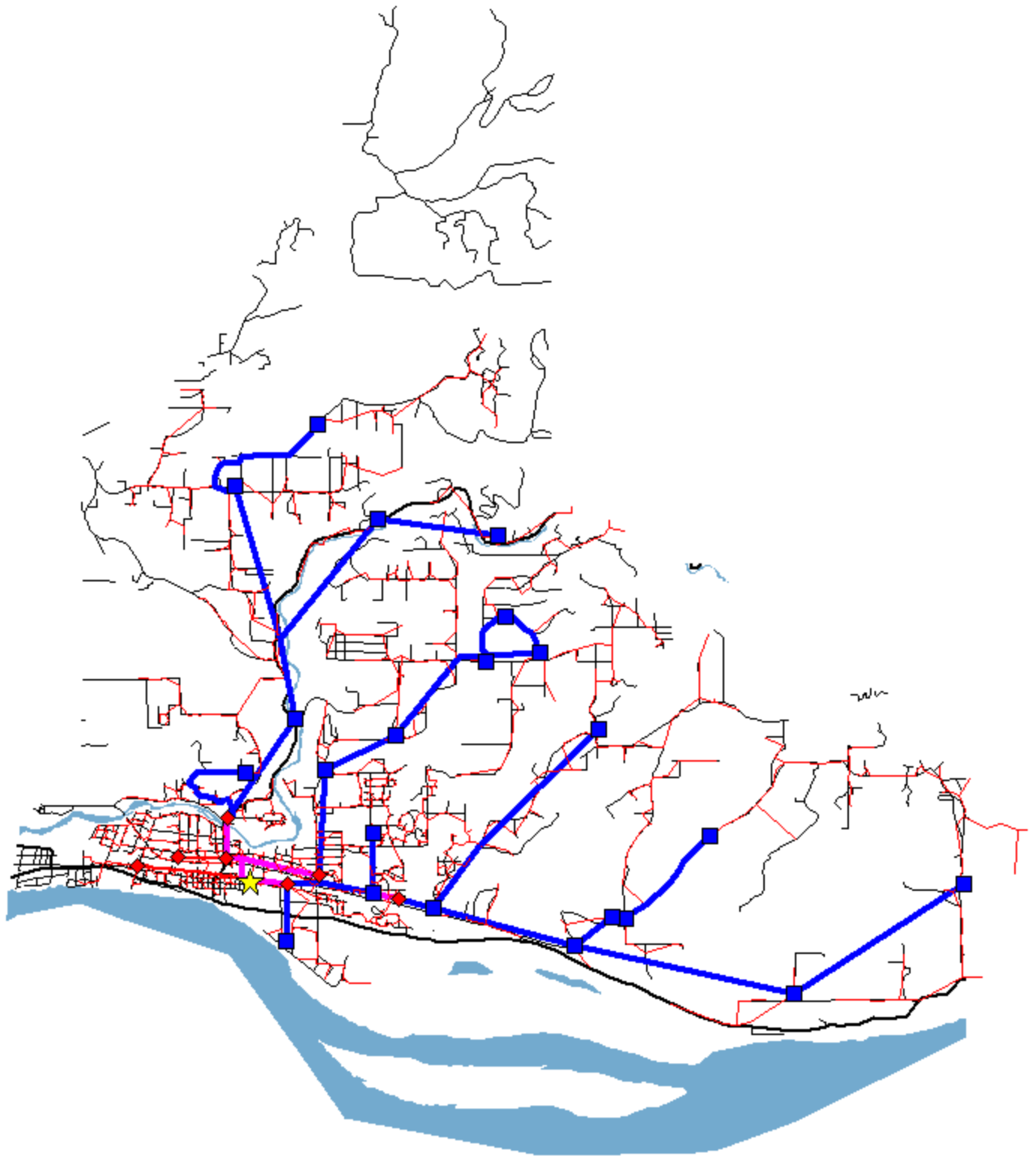
WNTCWAXX: VzCost Network



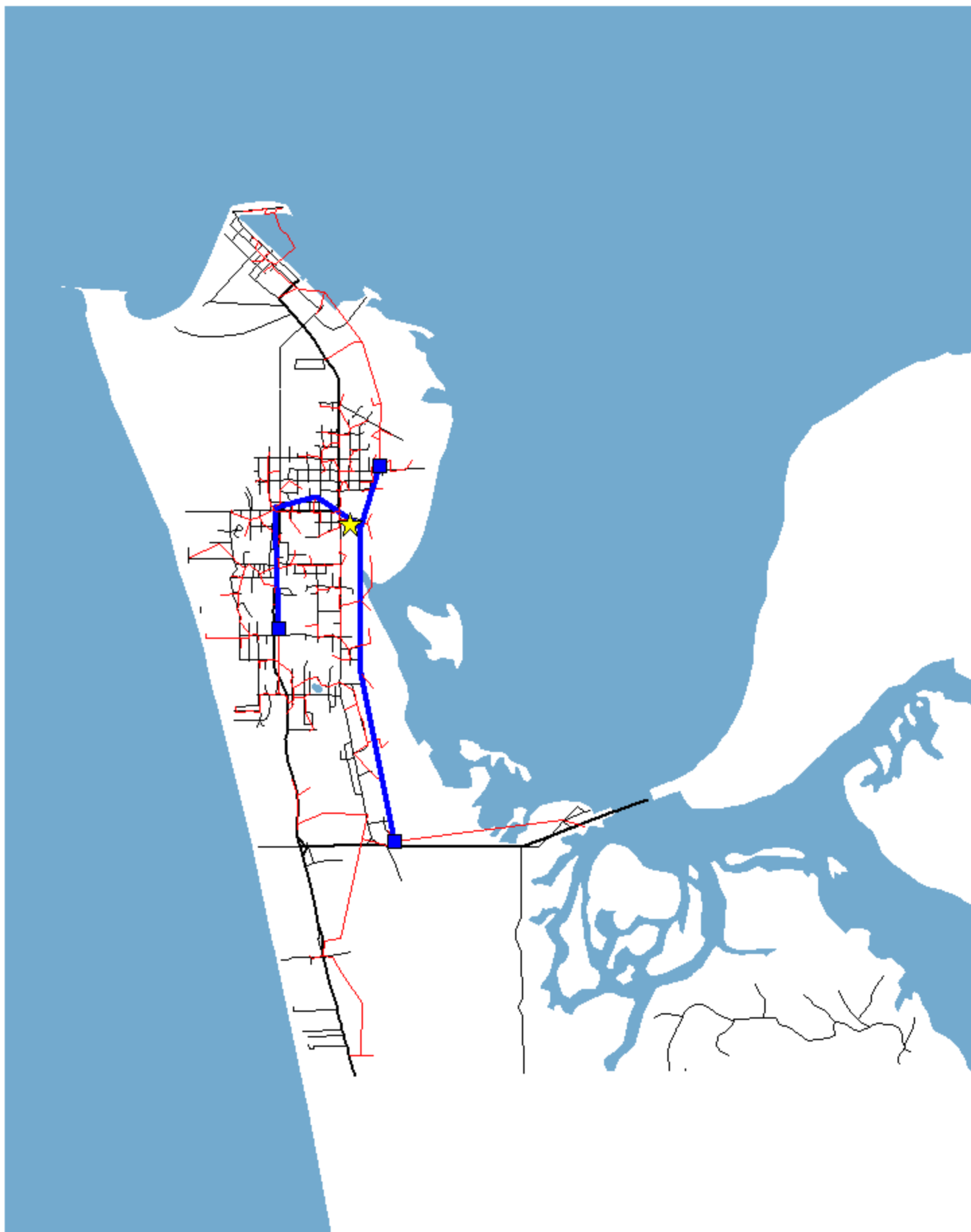
WRLDWAXA: VzCost Network



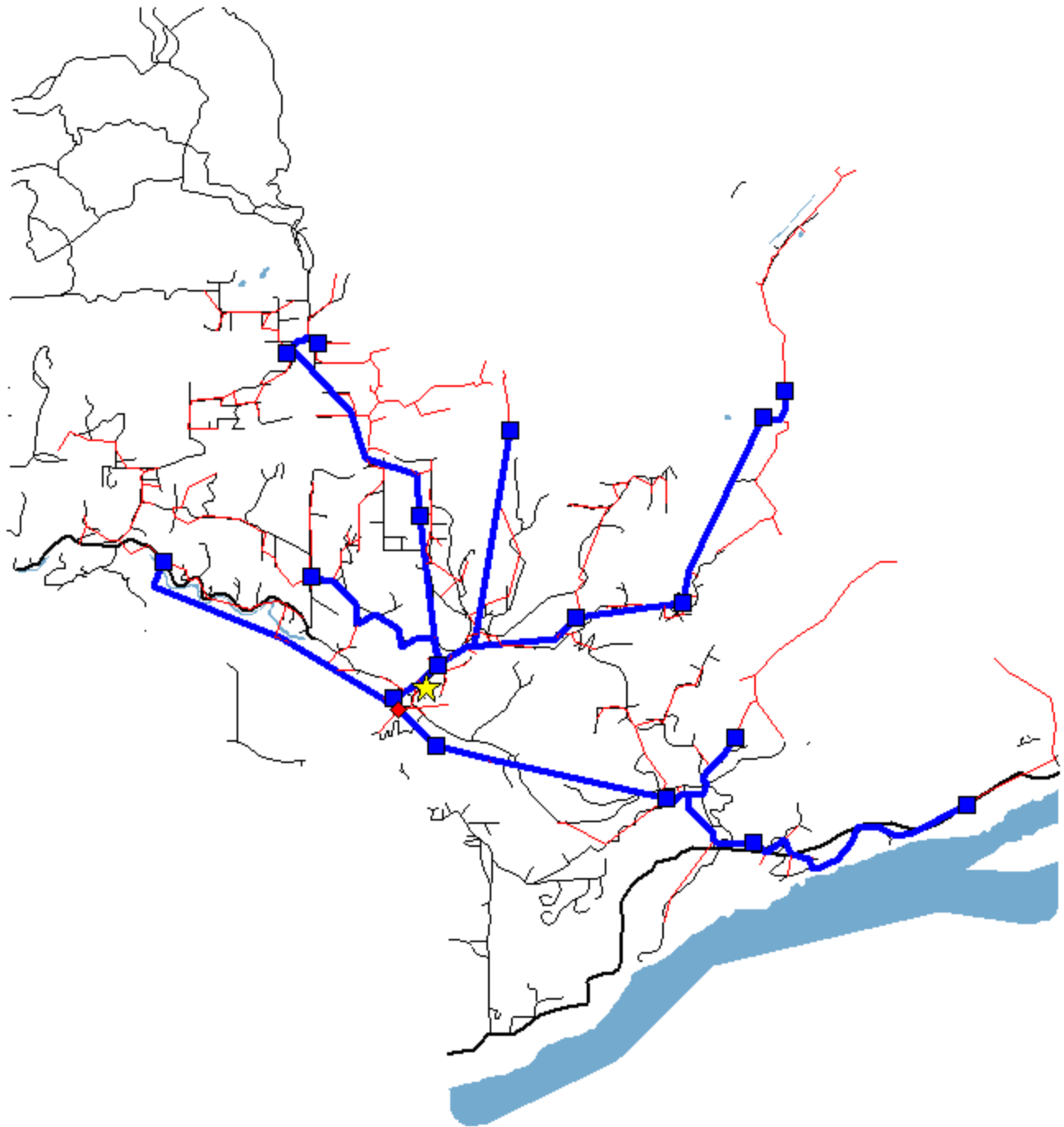
WSHGWAXA: VzCost Network



WSPTWAXA: VzCost Network



WSRVWAXA: VzCost Network



WTVLWAXA: VzCost Network

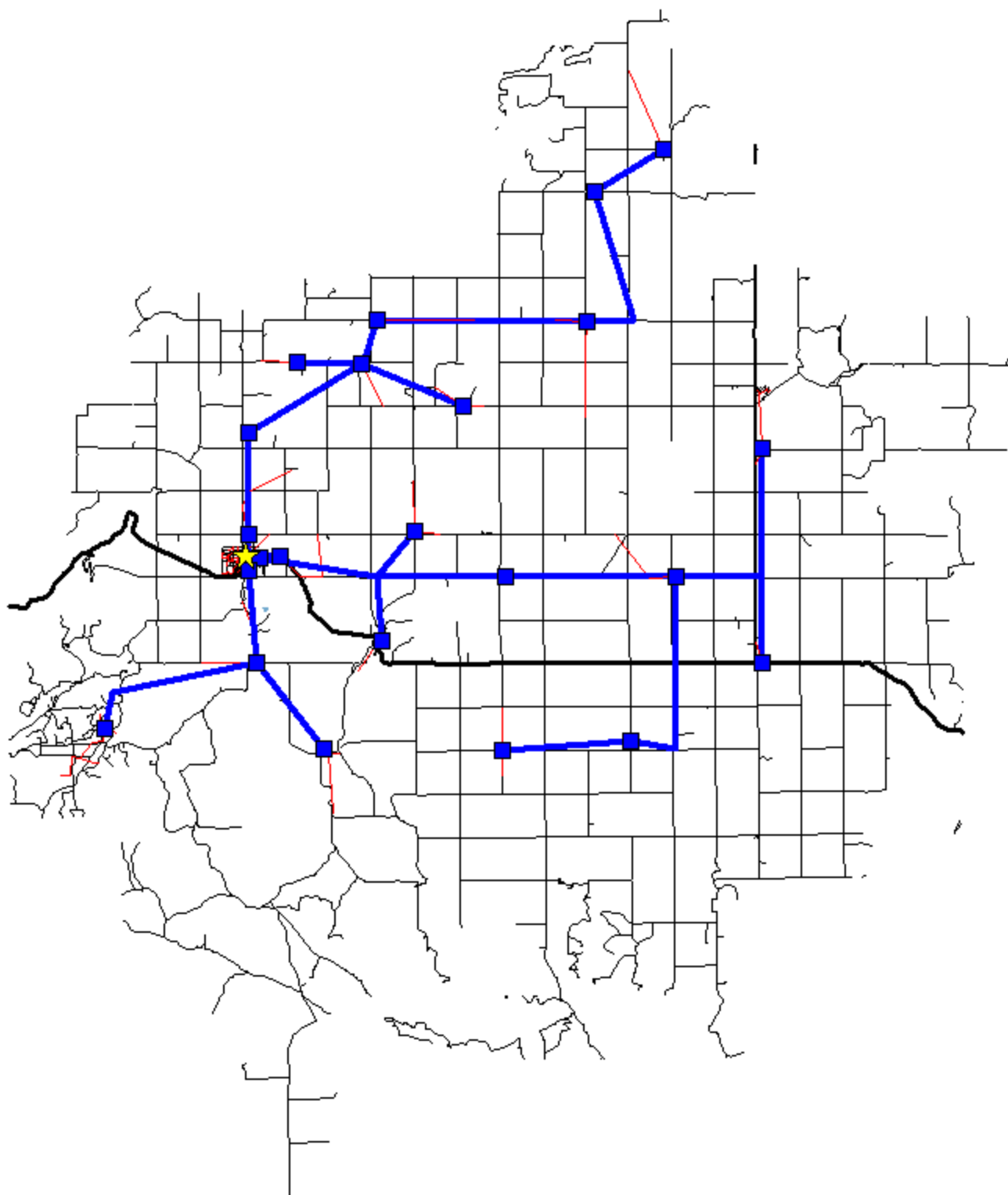


EXHIBIT B

Exhibit CMD-6 (HM 5.3)
Reply Declaration of Christian M. Dippon



Central Office Switch



SAI



Fiber Feeder



Copper Feeder



Distribution (backbone and branch)



Primary Highway (limited access)



Primary Highway



Major Road

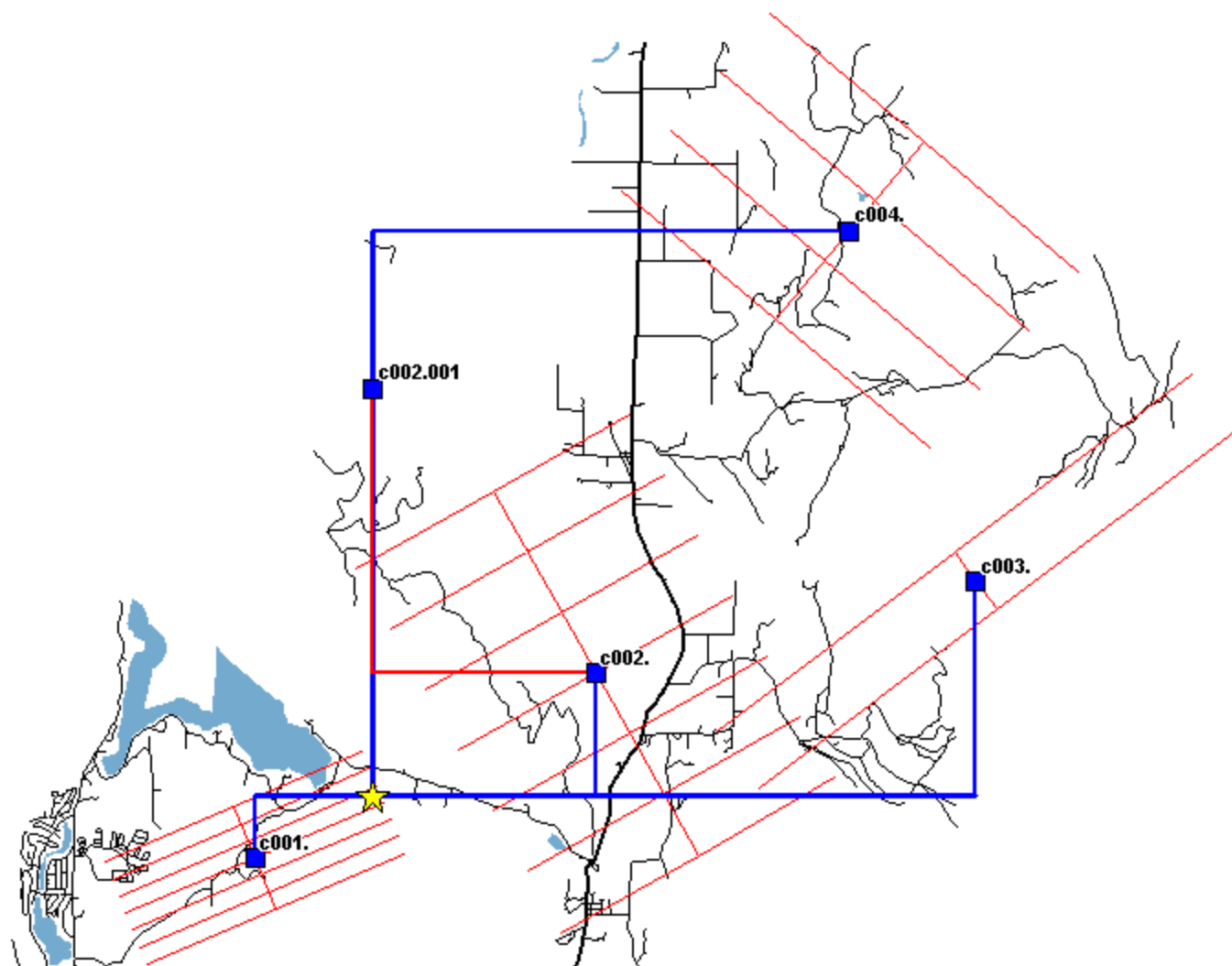


Minor Road

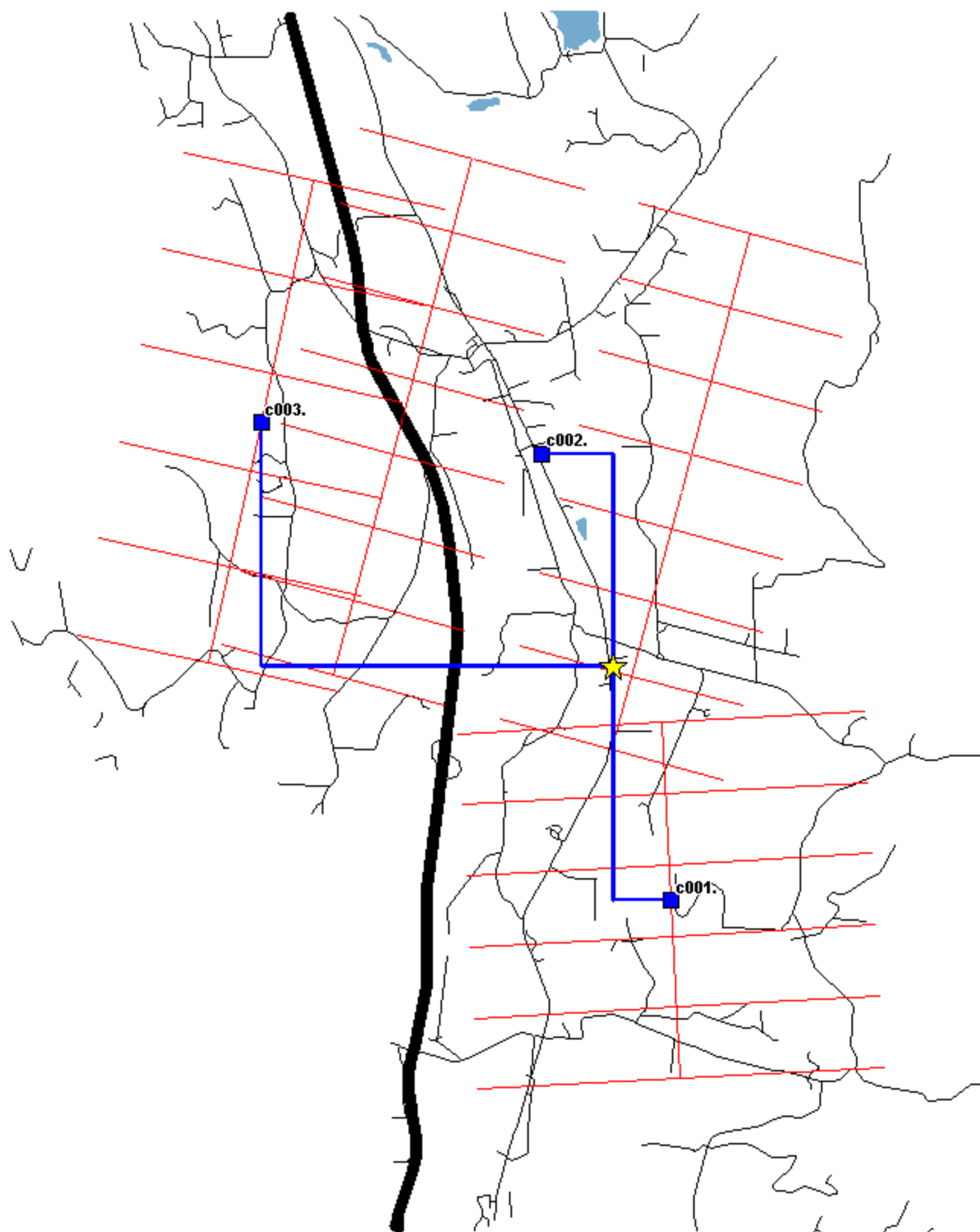


Water

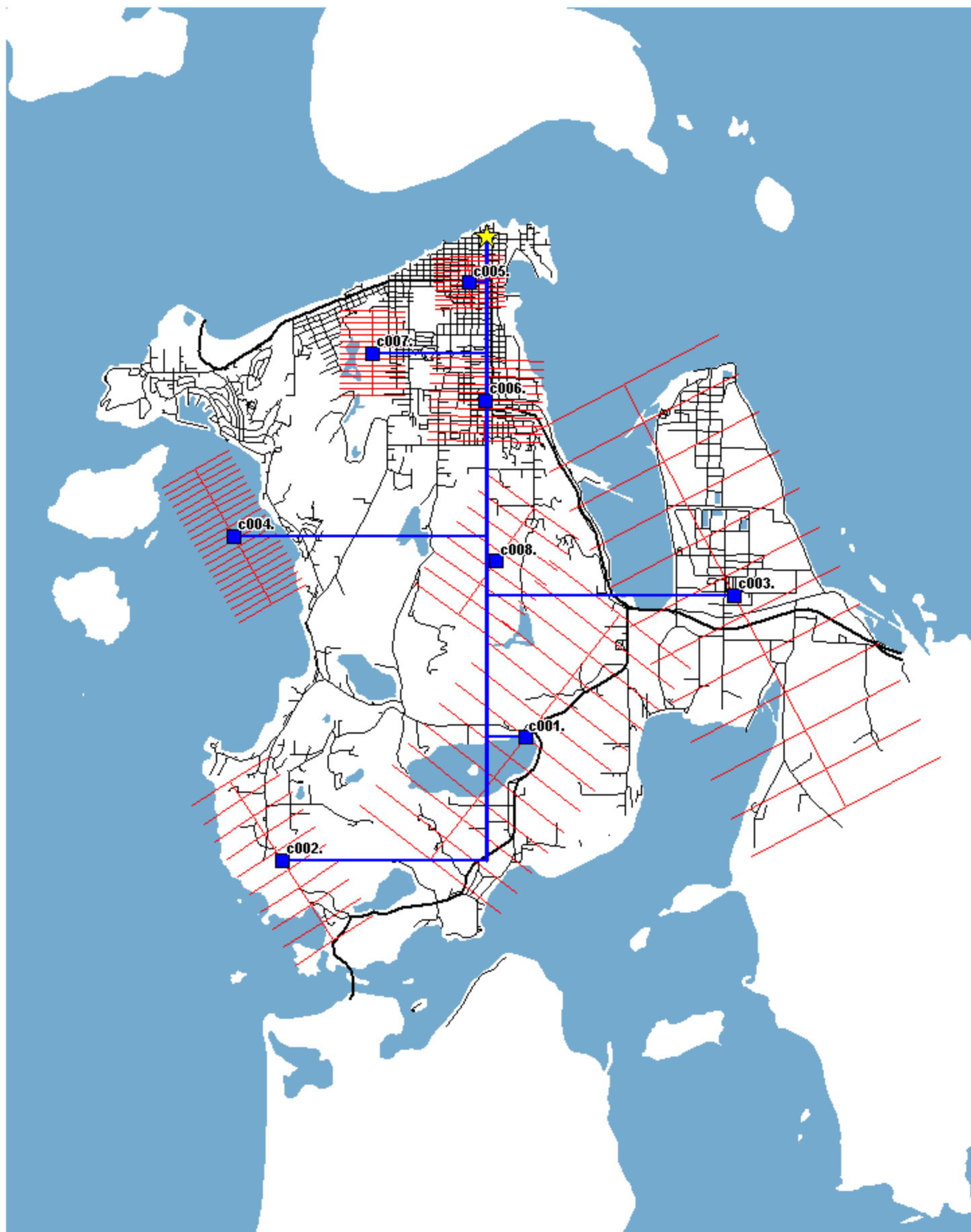
ACMEWAXA: HAI Network



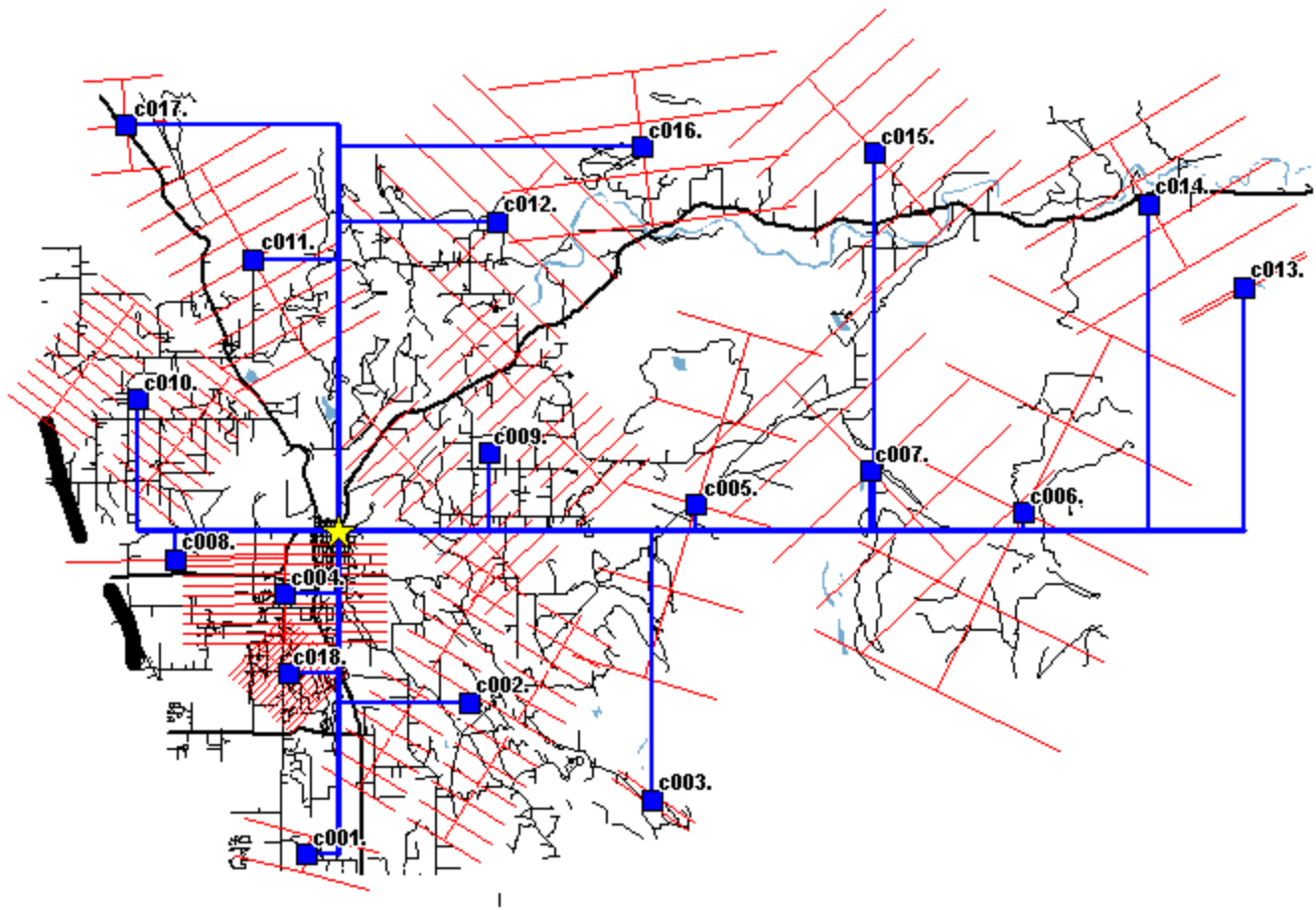
ALGRWAXX: HAI Network



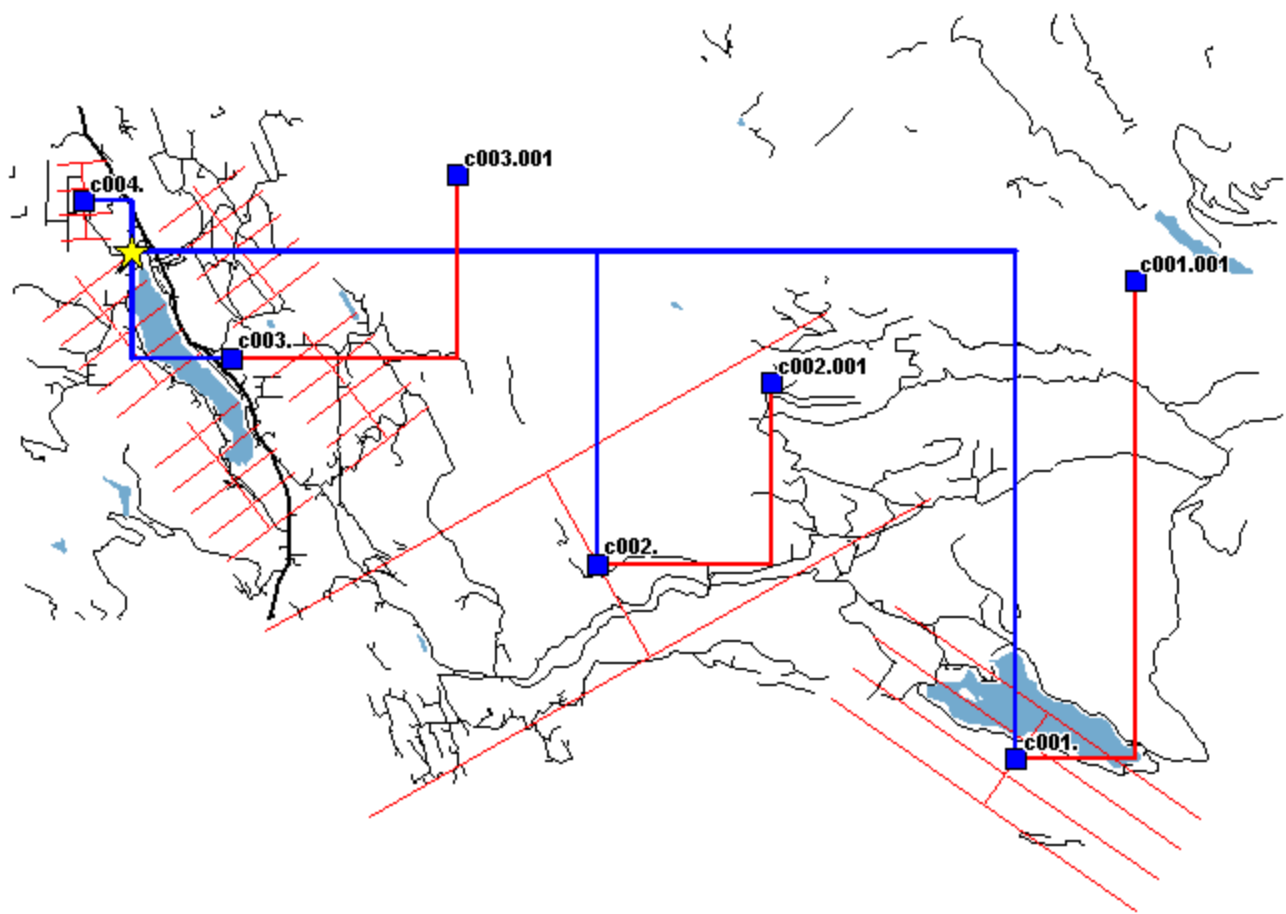
ANCRWAXX: HAI Network



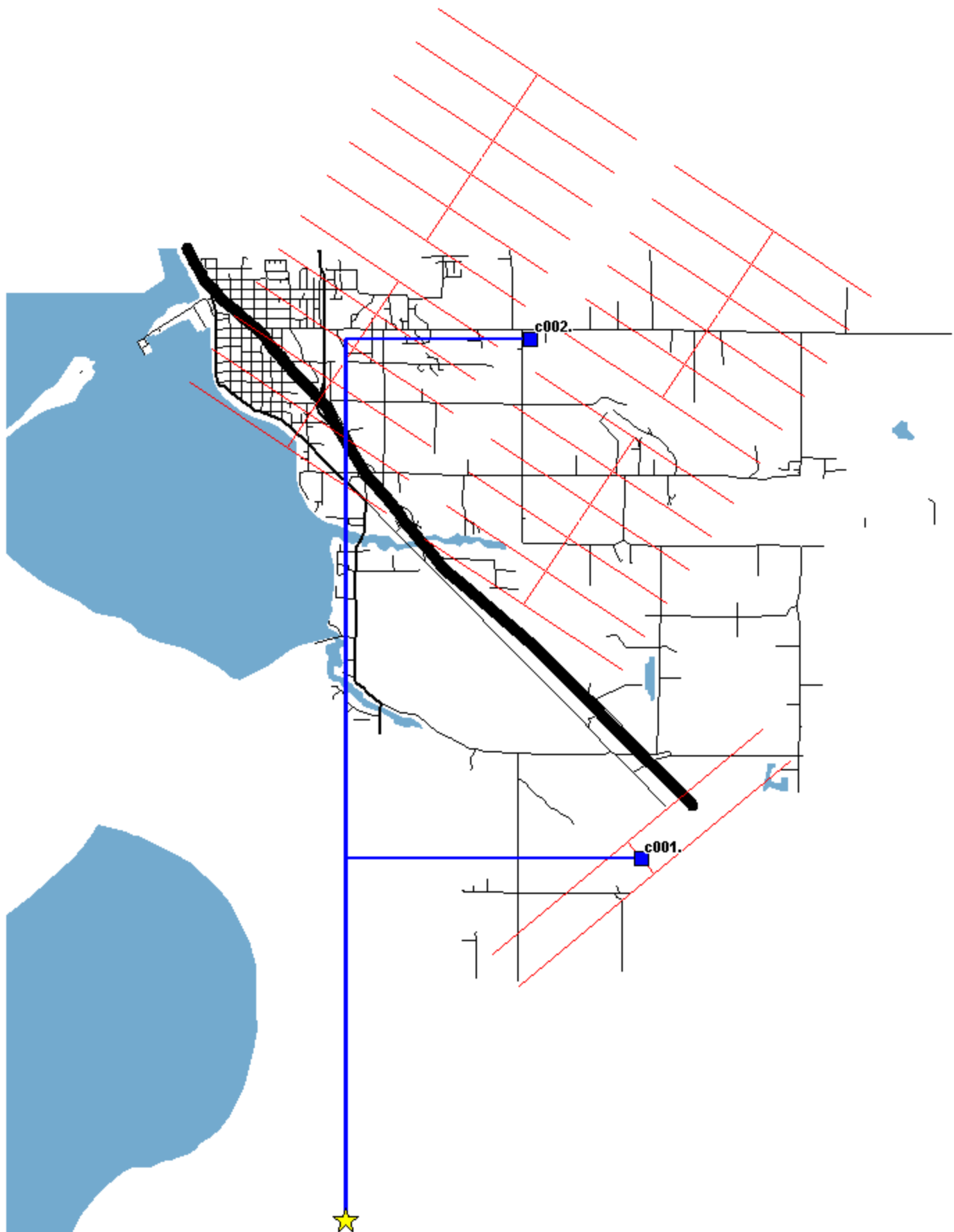
ARTNWAXX: HAI Network



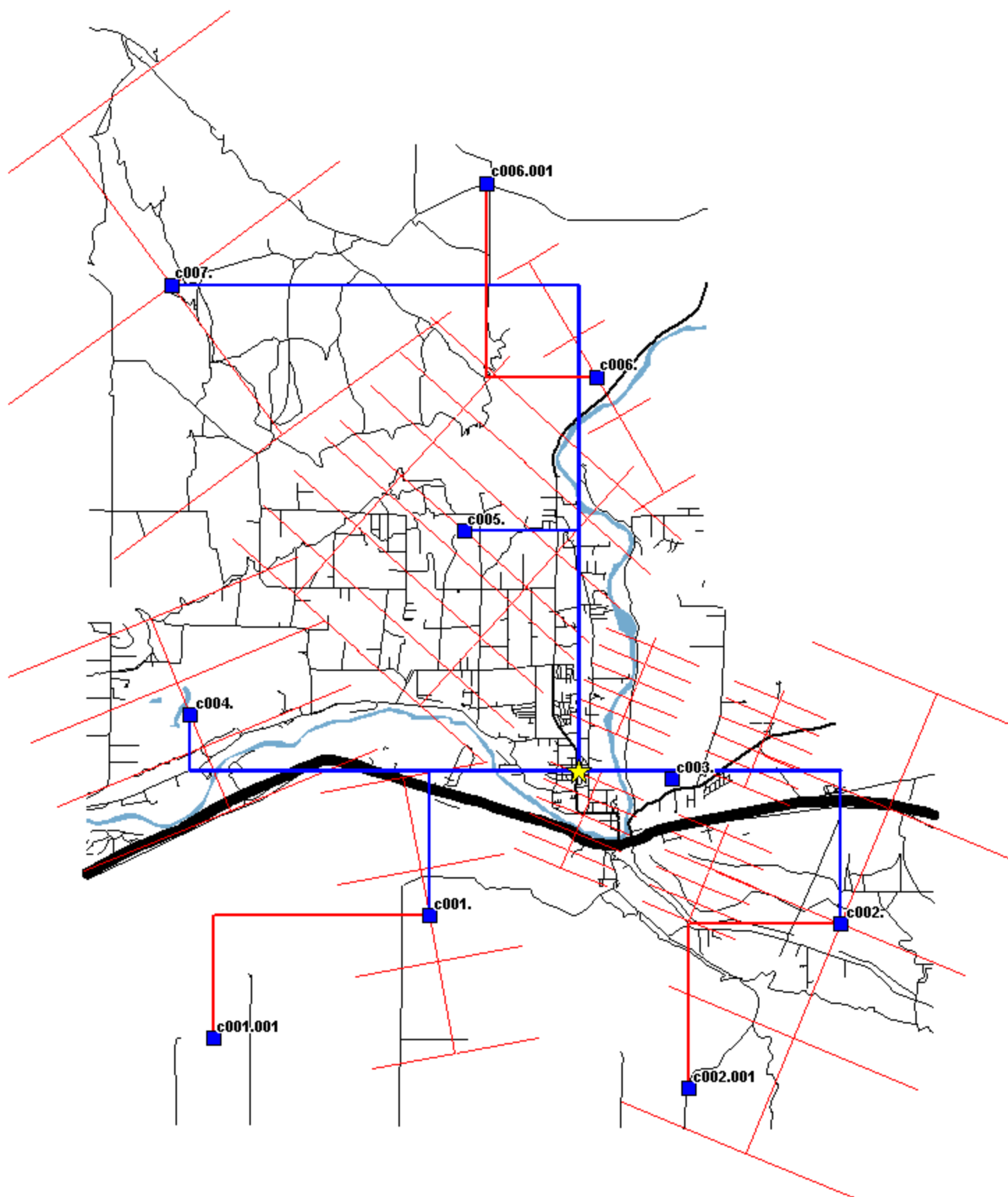
BGLKWAXX: HAI Network



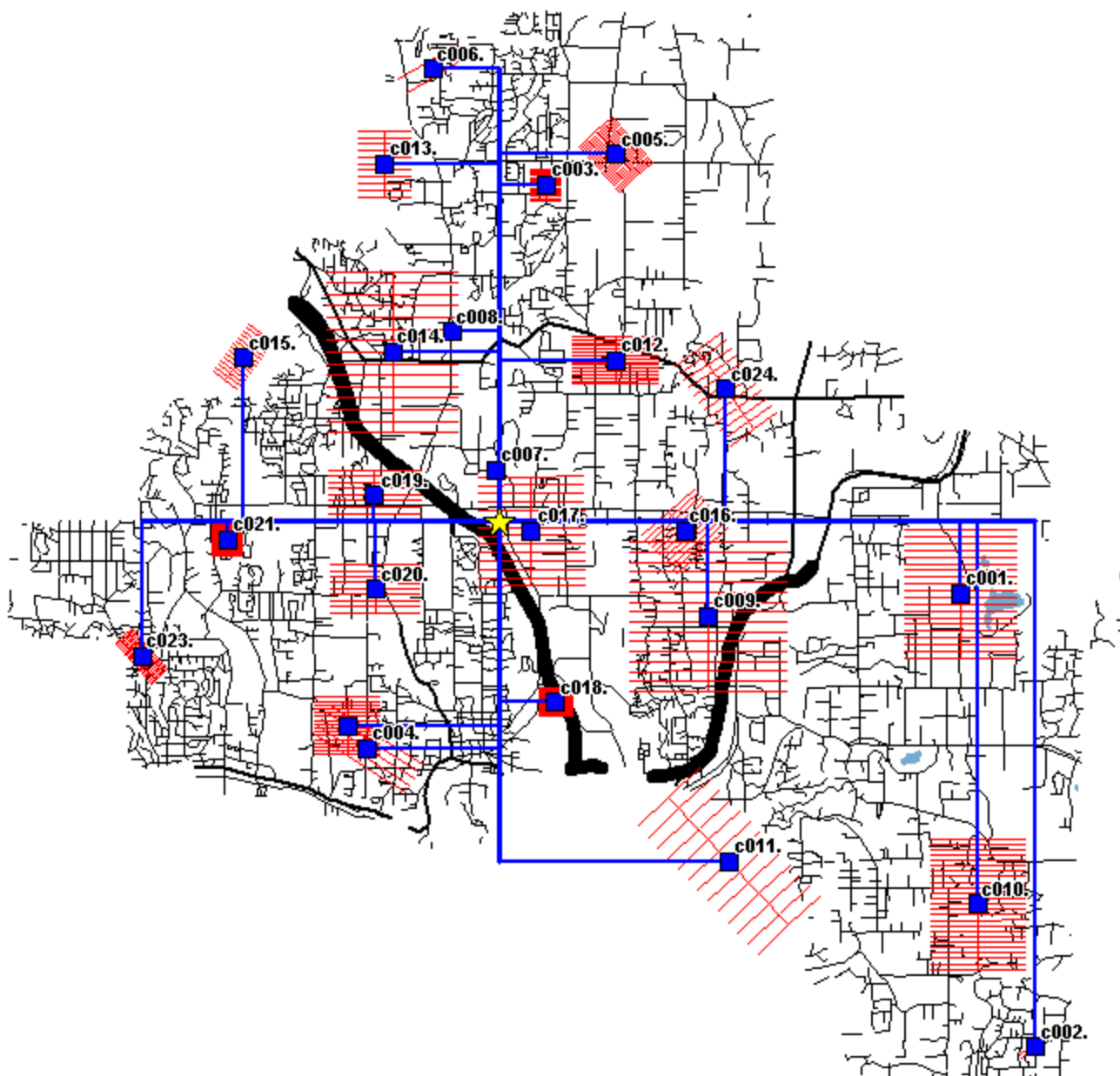
BLANWAXB: HAI Network



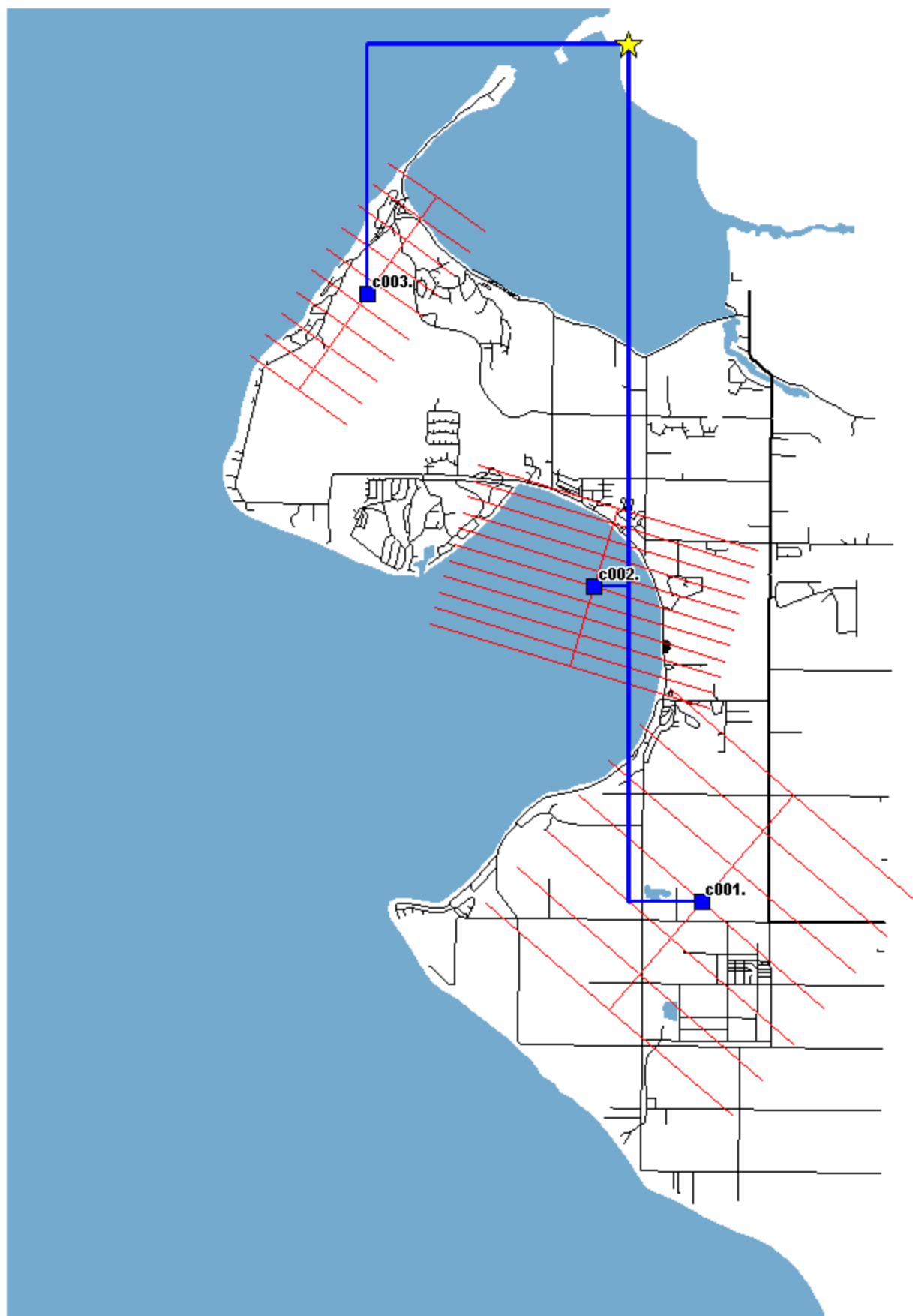
BNCYWAXX: HAI Network



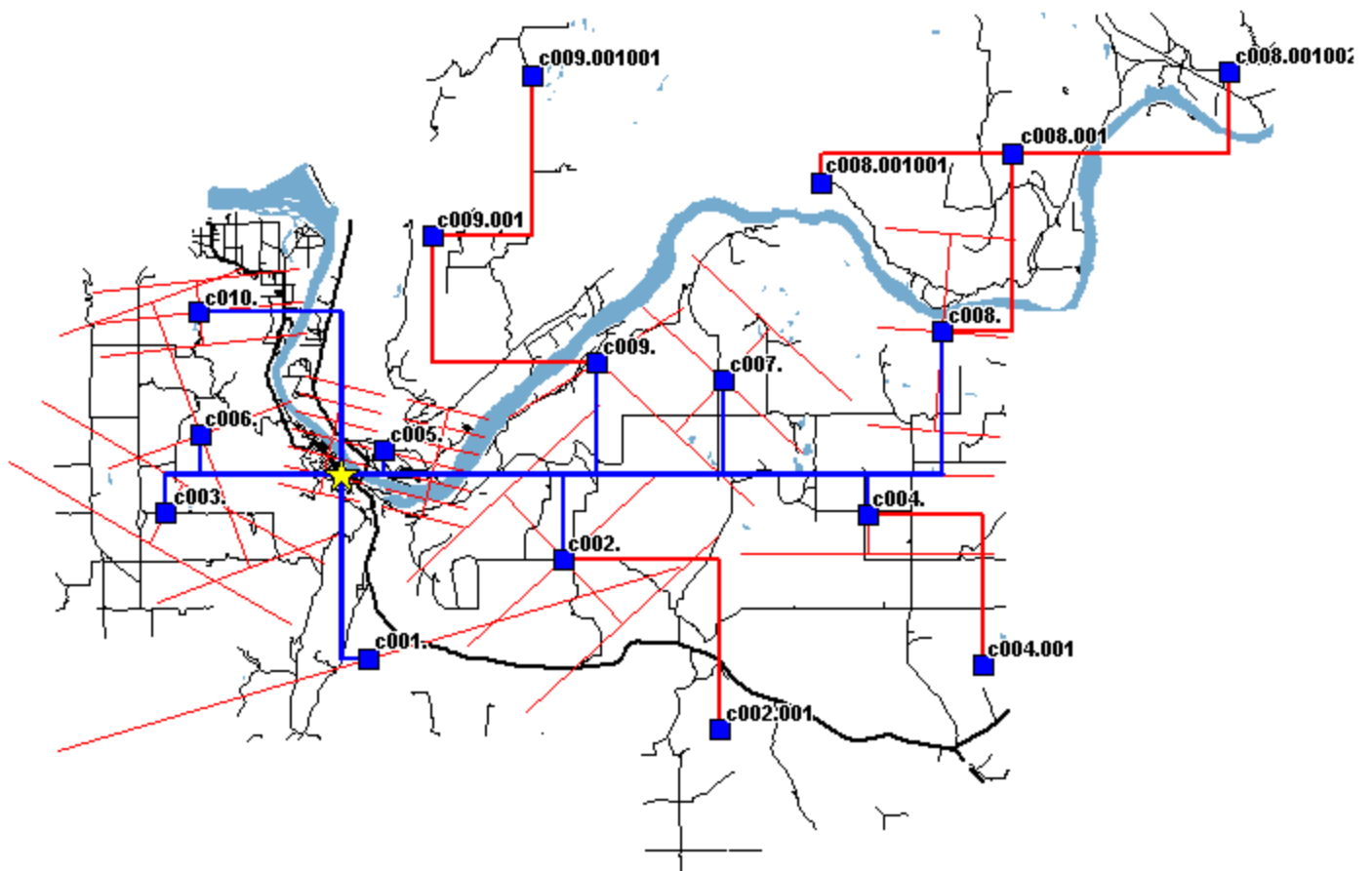
BOTHWAXB: HAI Network



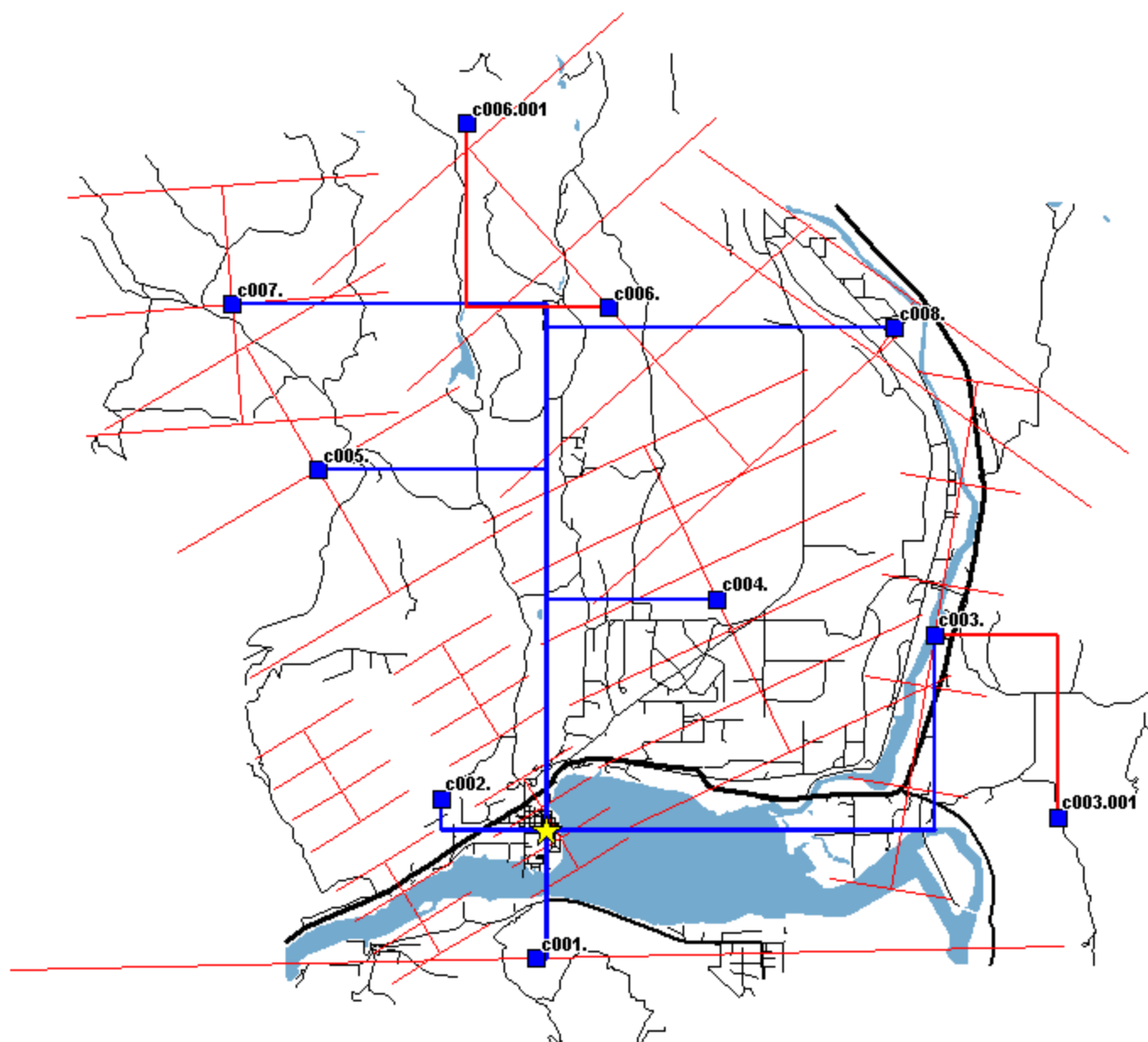
BRBAWAXA: HAI Network



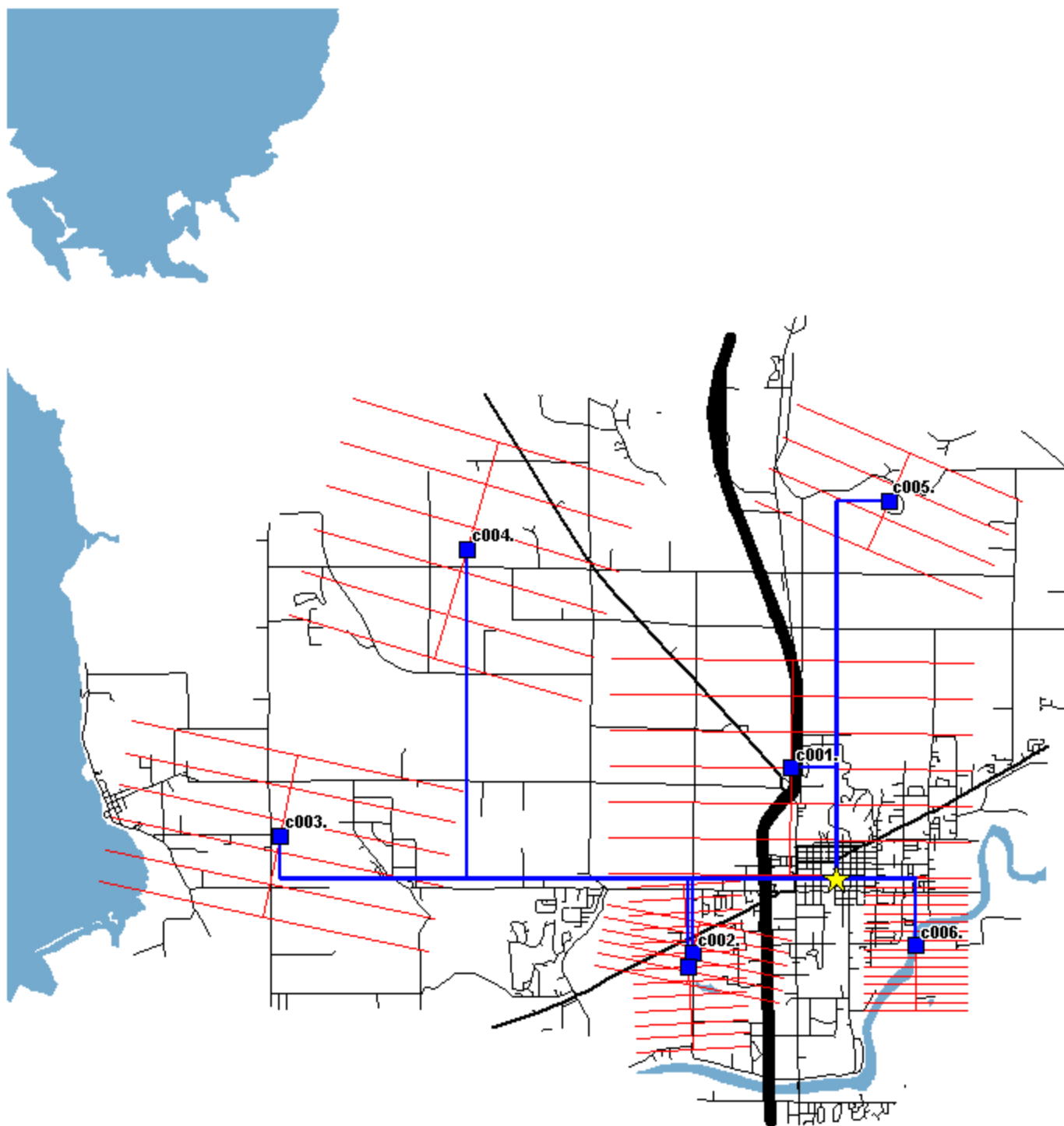
BRPTWAXX: HAI Network



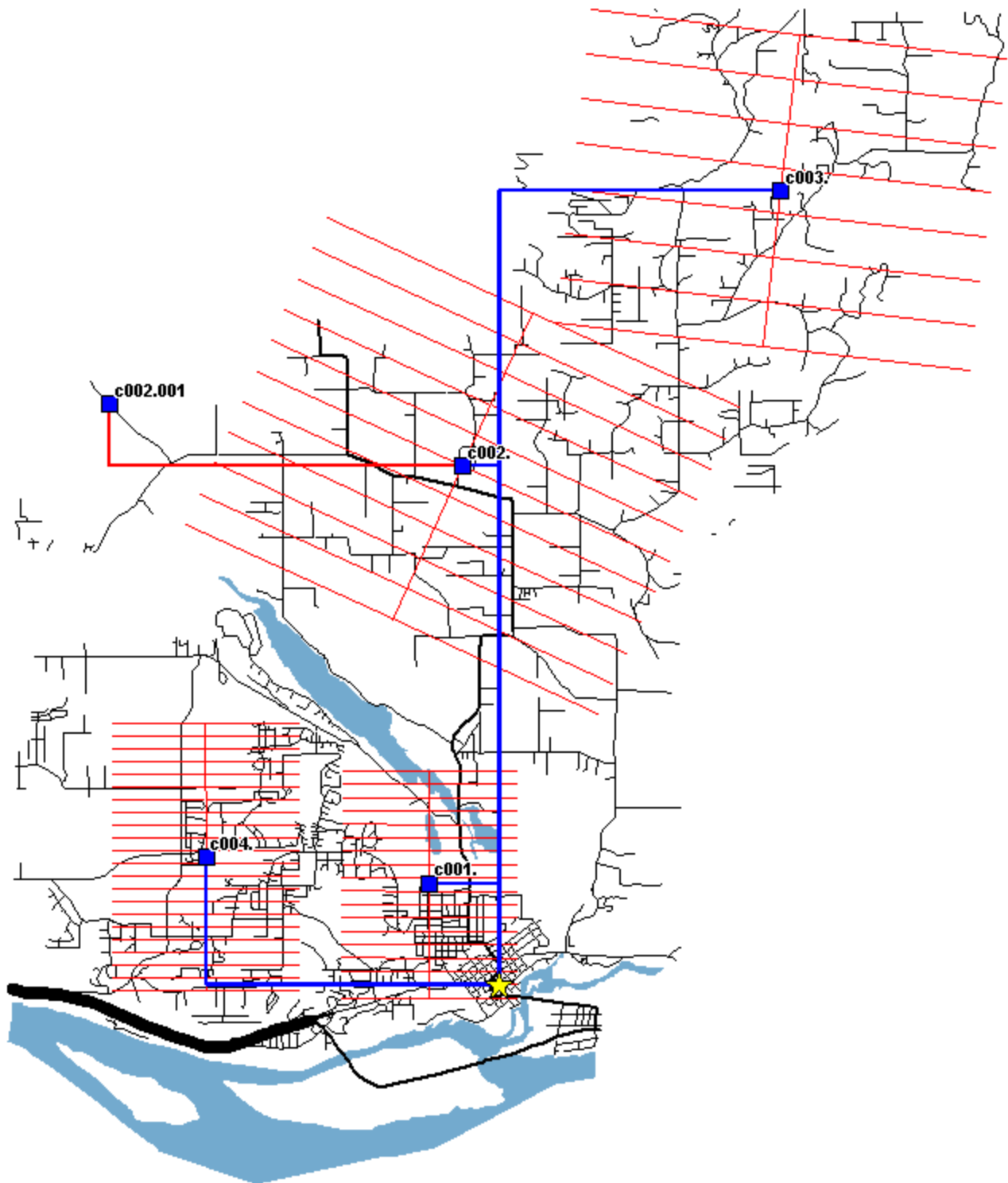
BRWSWAXA: HAI Network



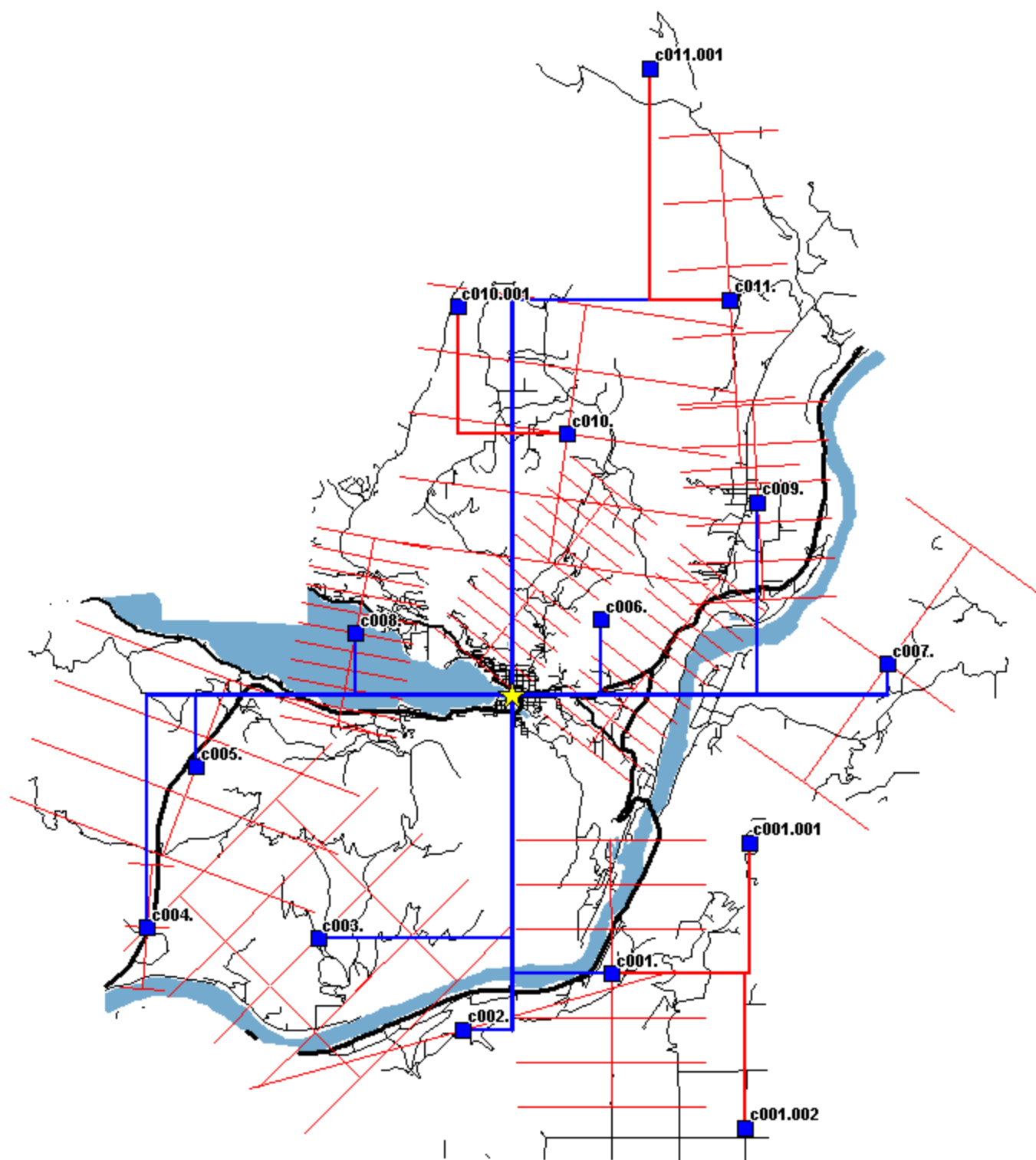
BURLWAXX: HAI Network



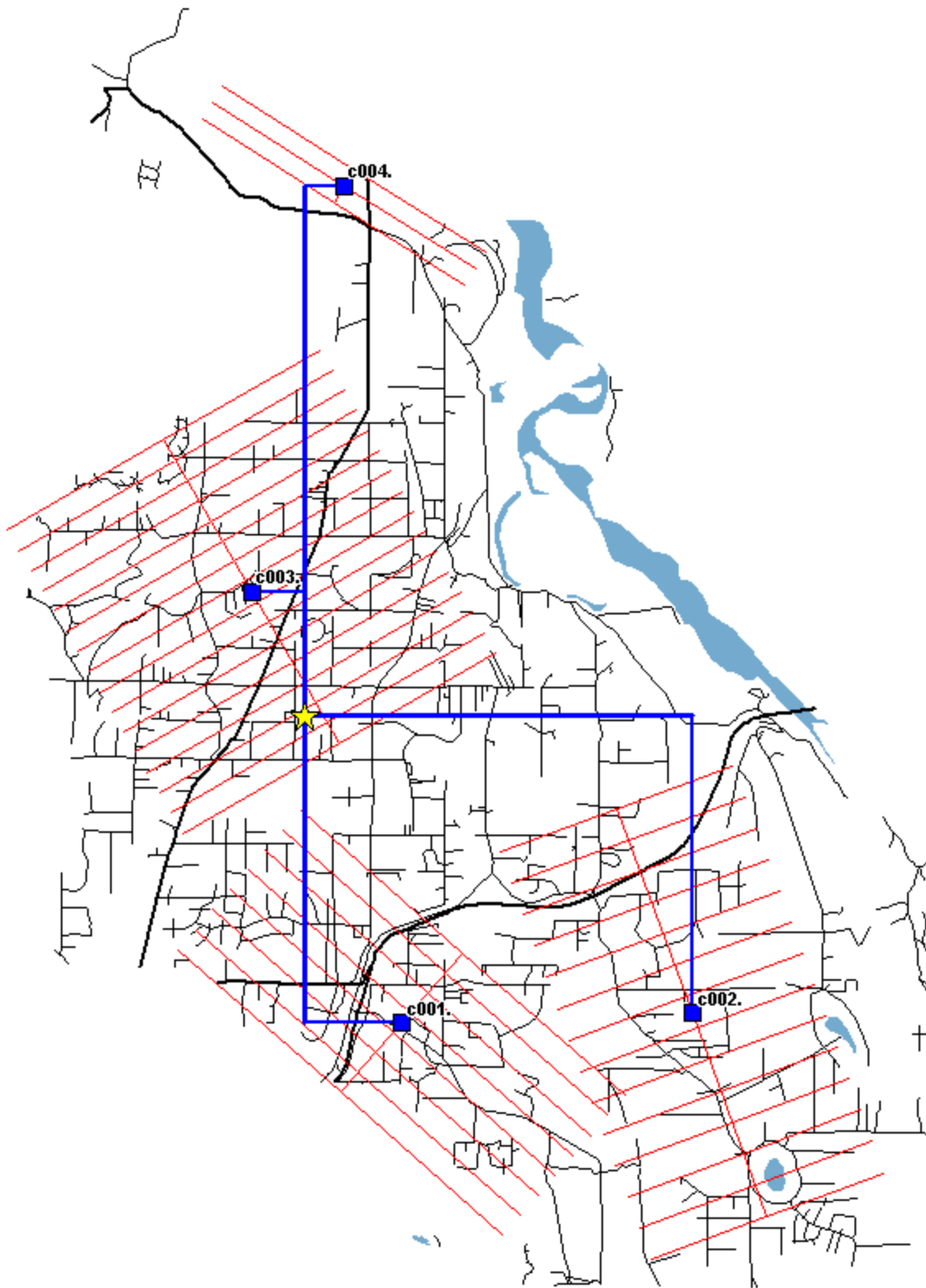
CAMSWAXX: HAI Network



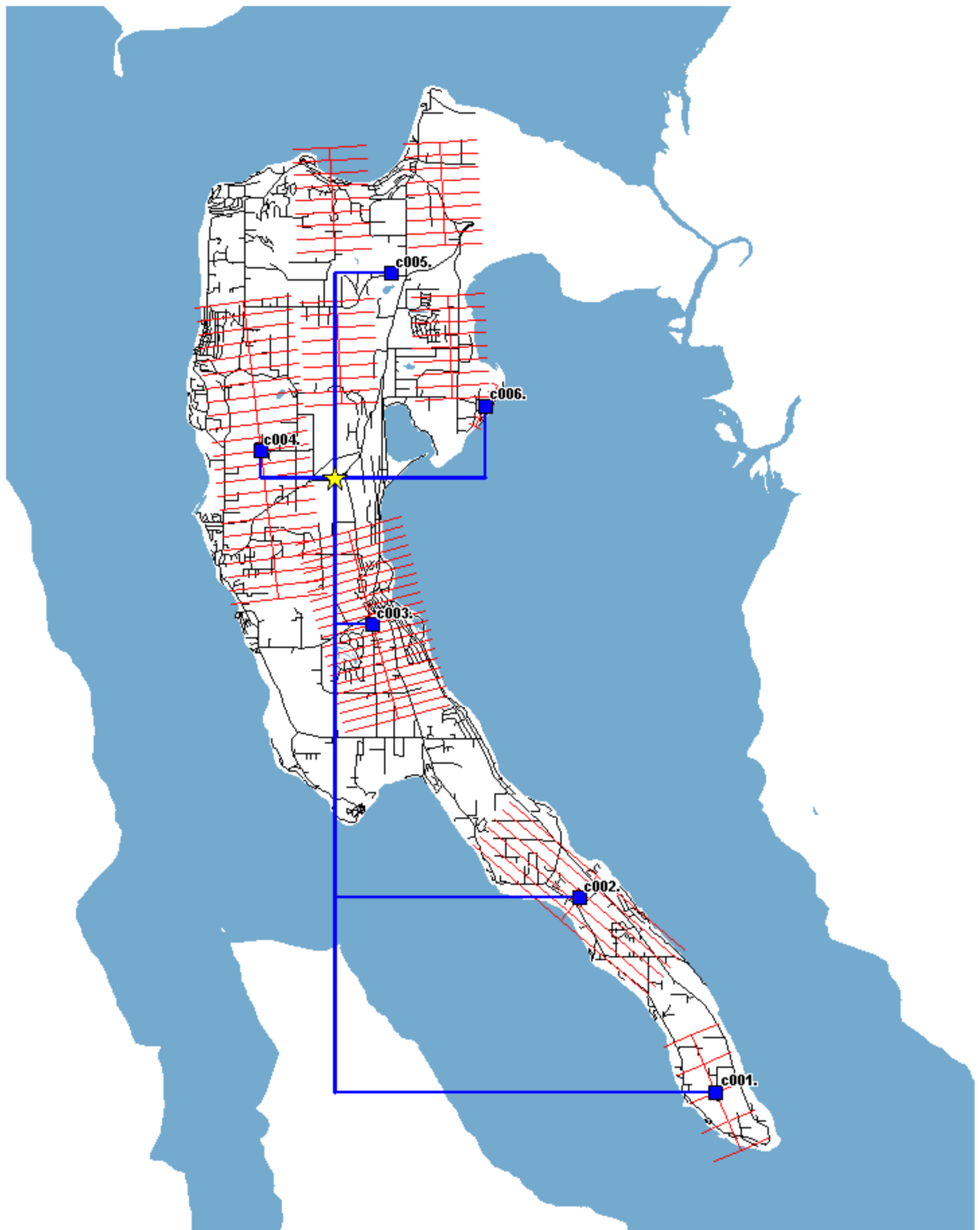
CHLNWAXX: HAI Network



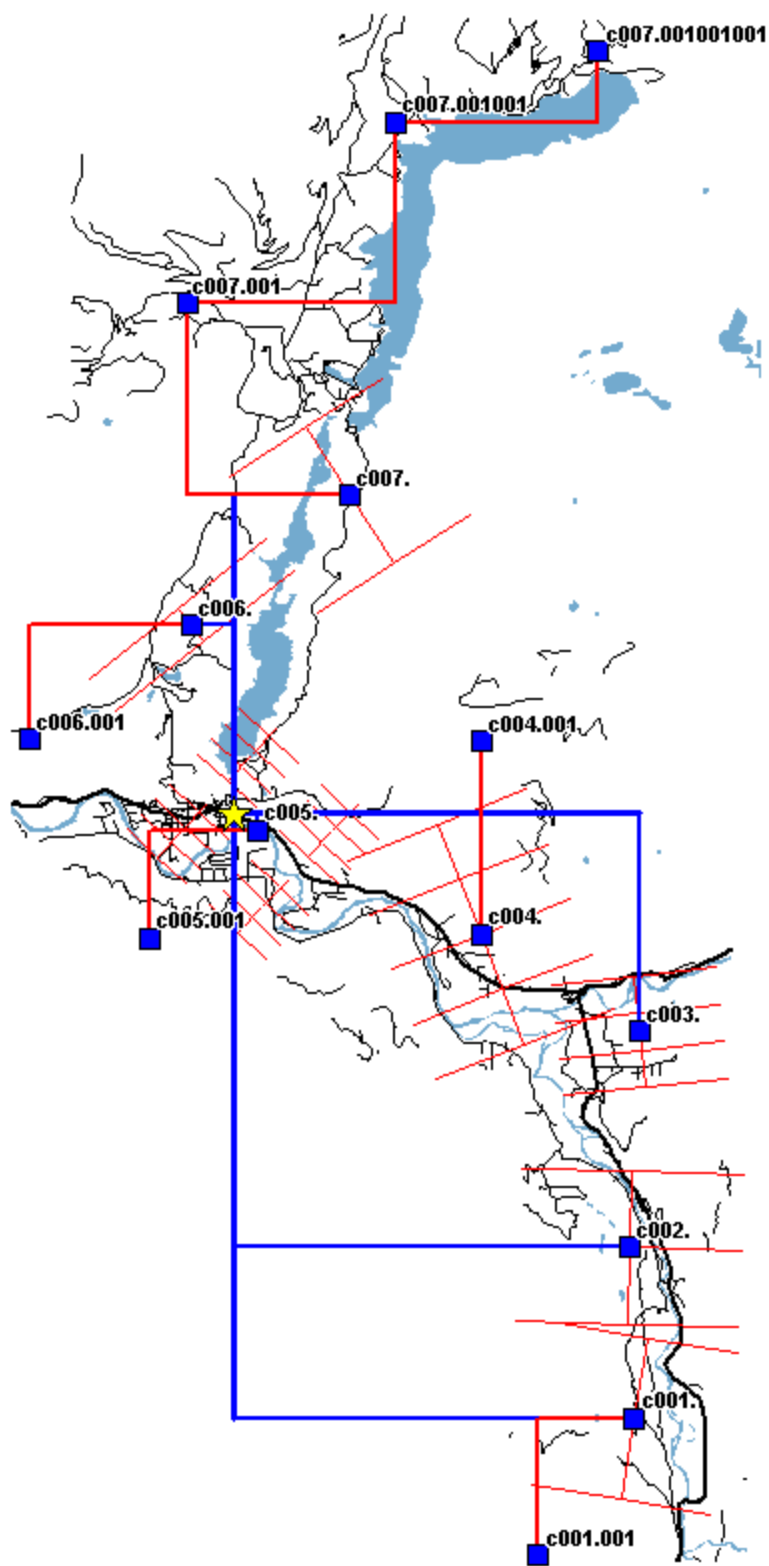
CLVWWAXA: HAI Network



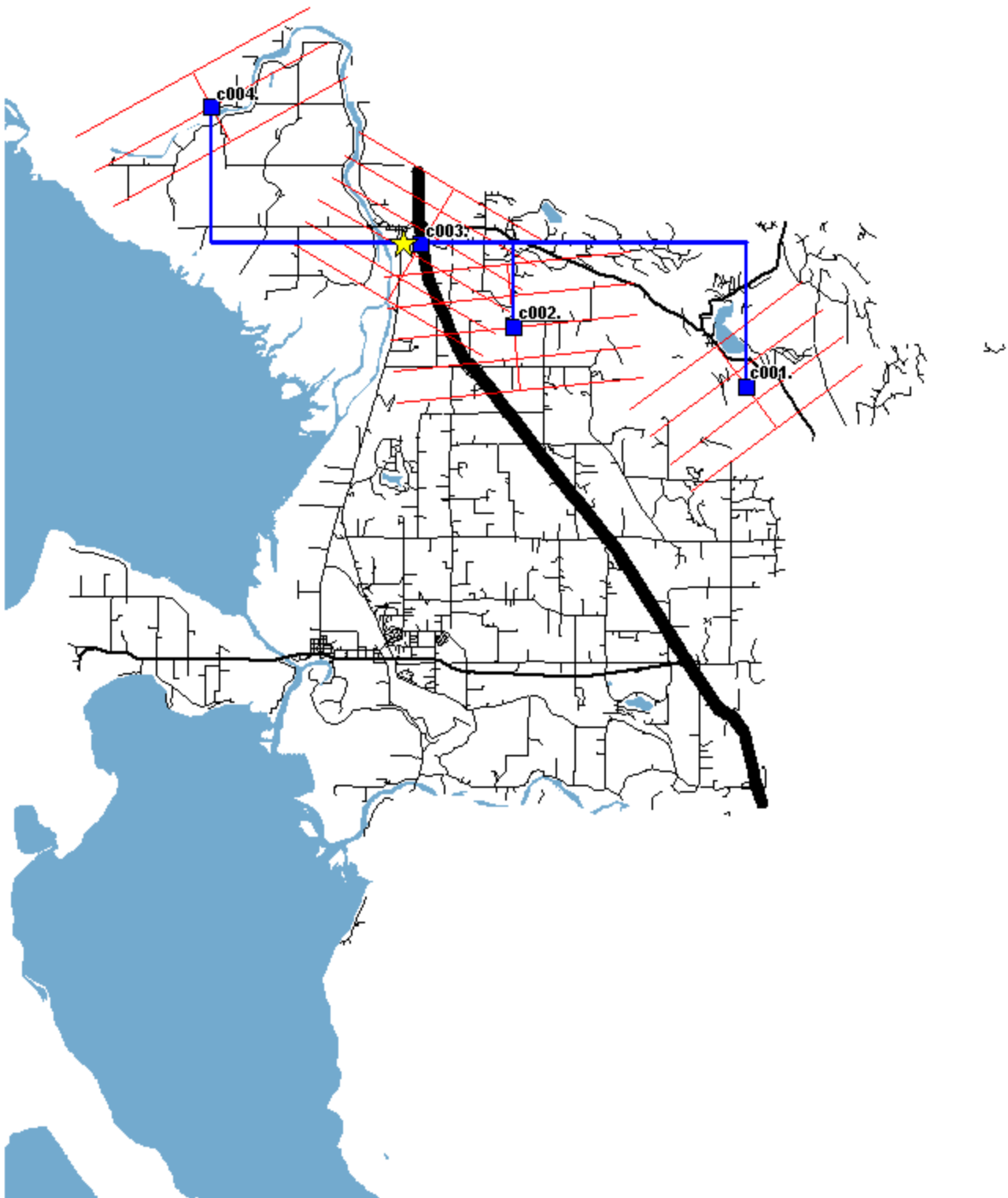
CMISWAXA: HAI Network



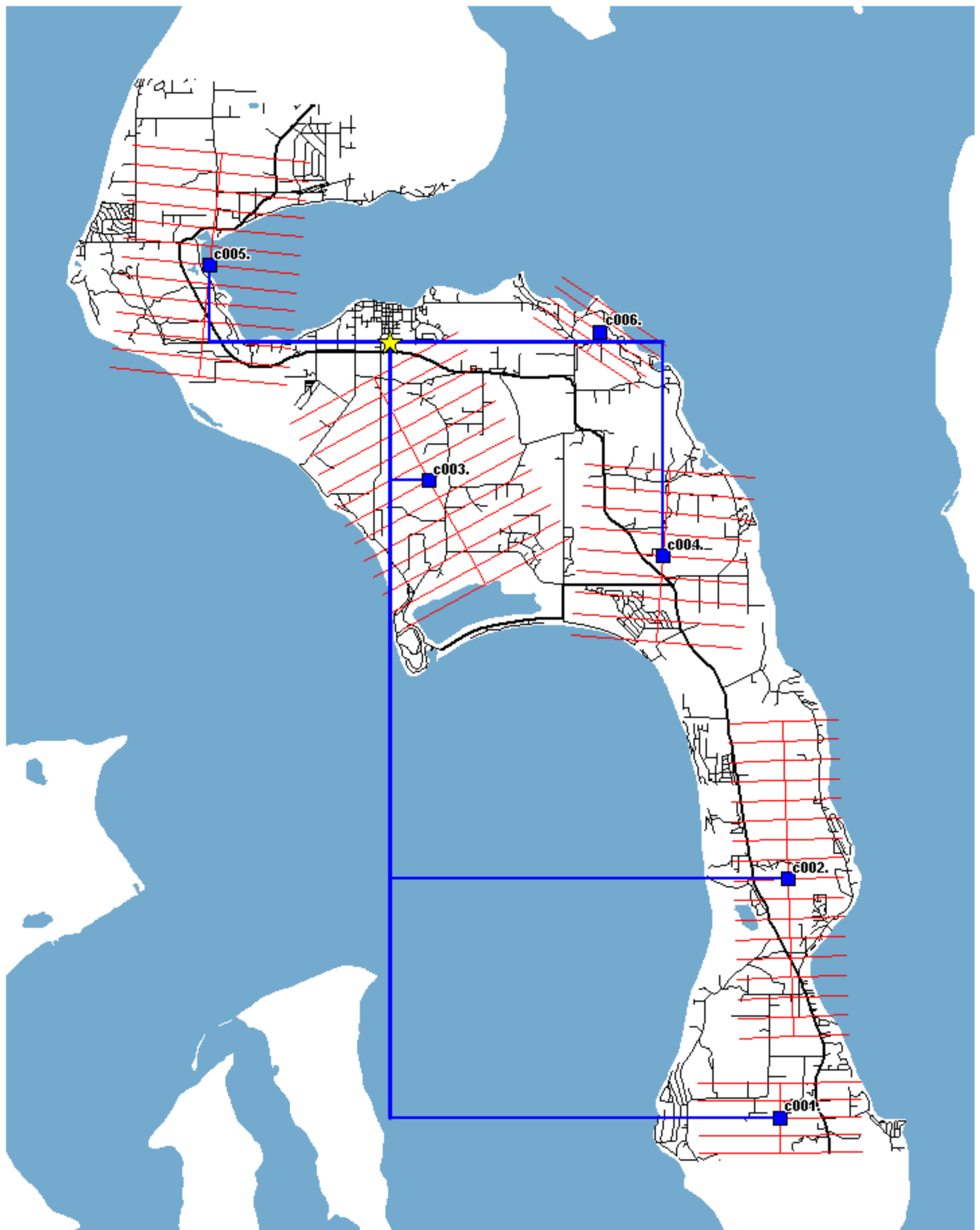
CNCRWAXX: HAI Network



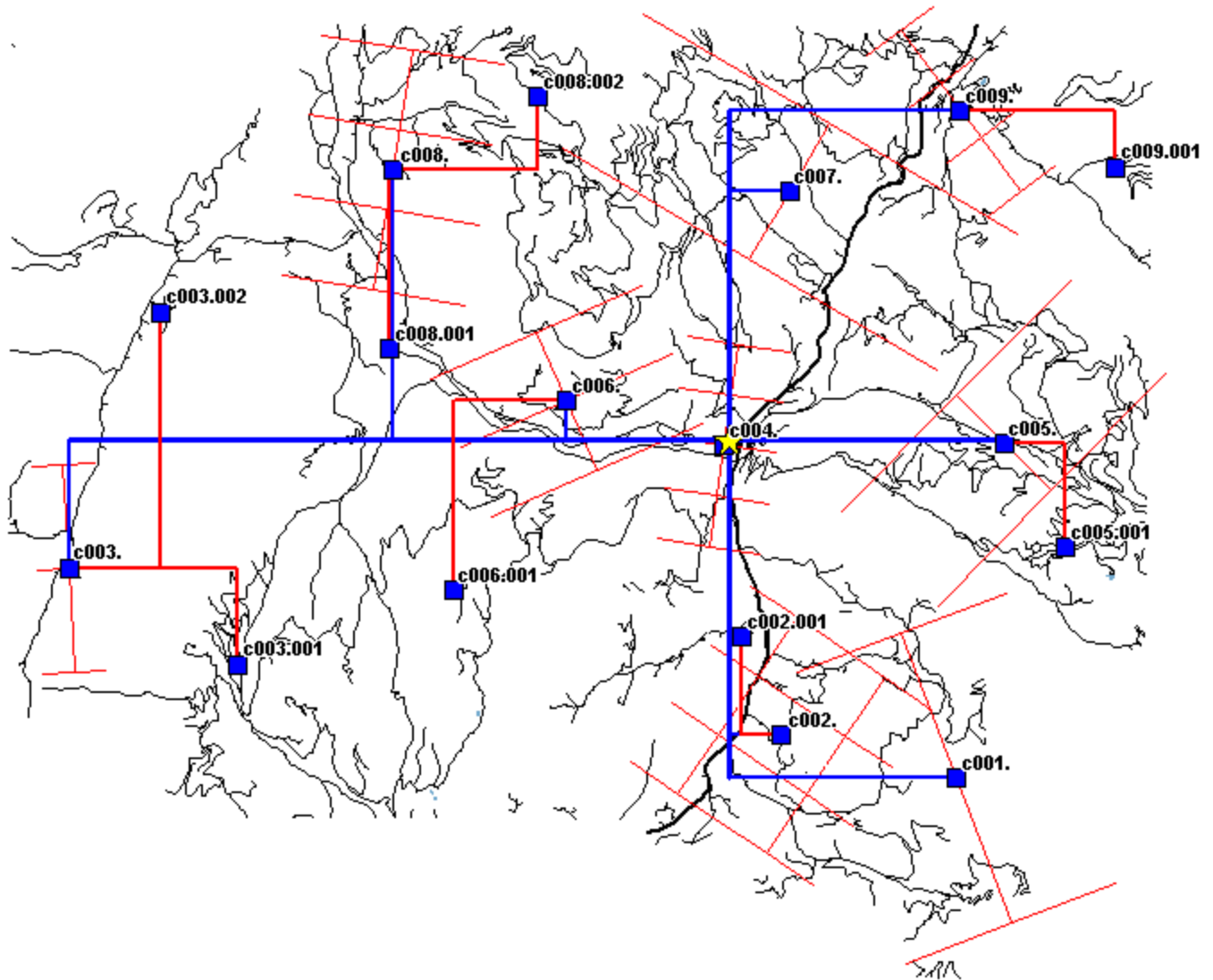
CNWWYWAXX: HAI Network



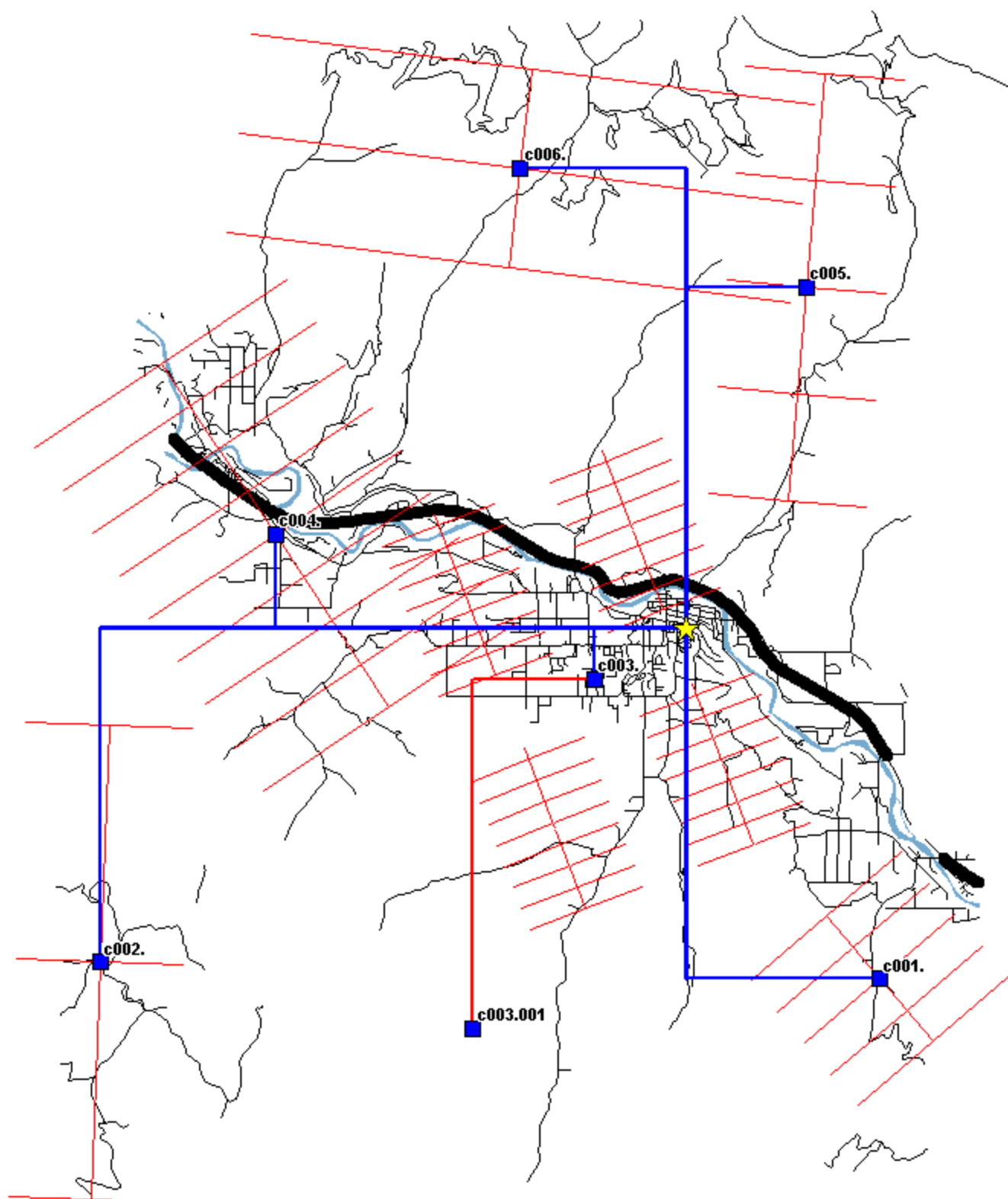
CPVLWAXX: HAI Network



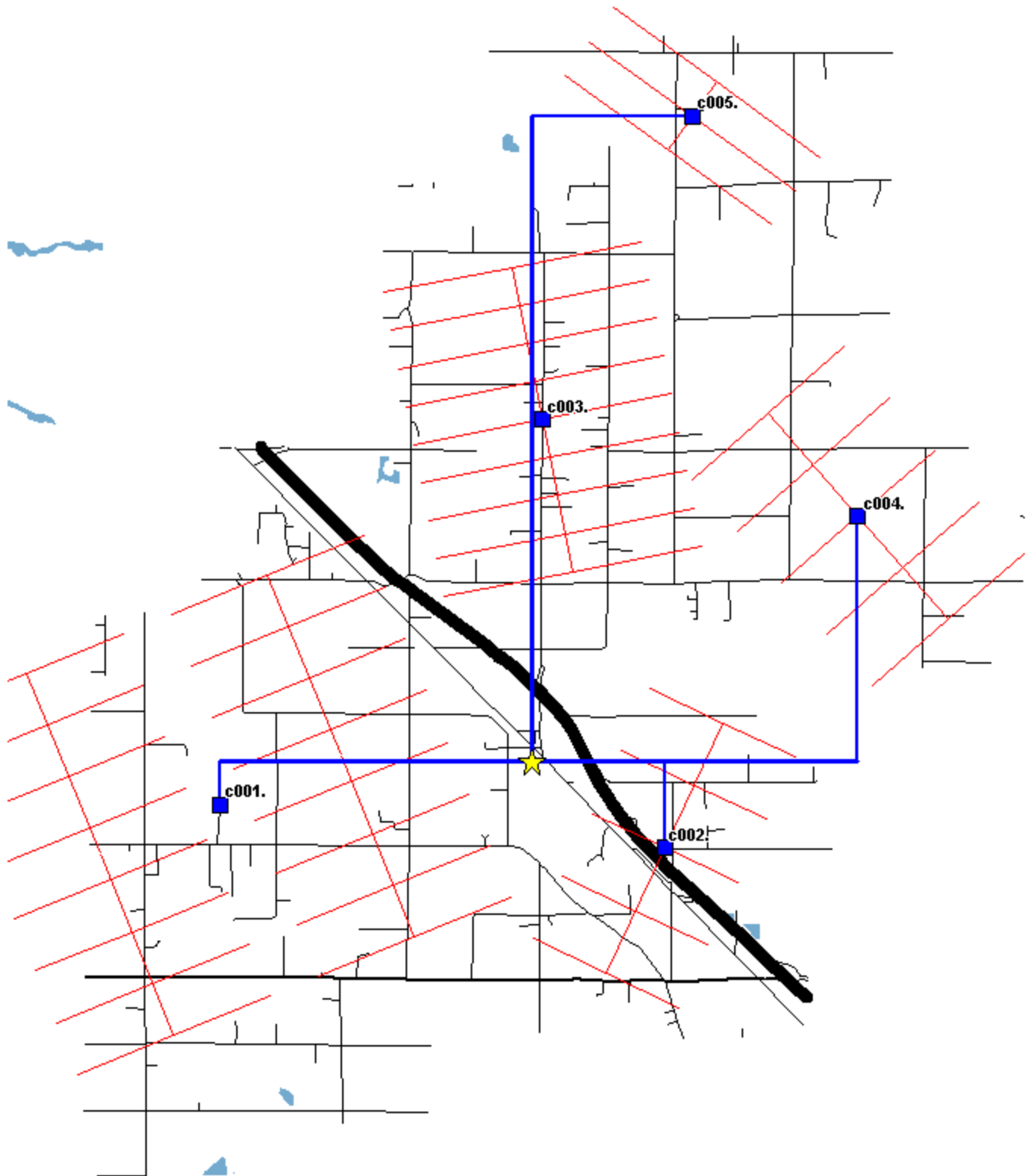
CRLWWAXA: HAI Network



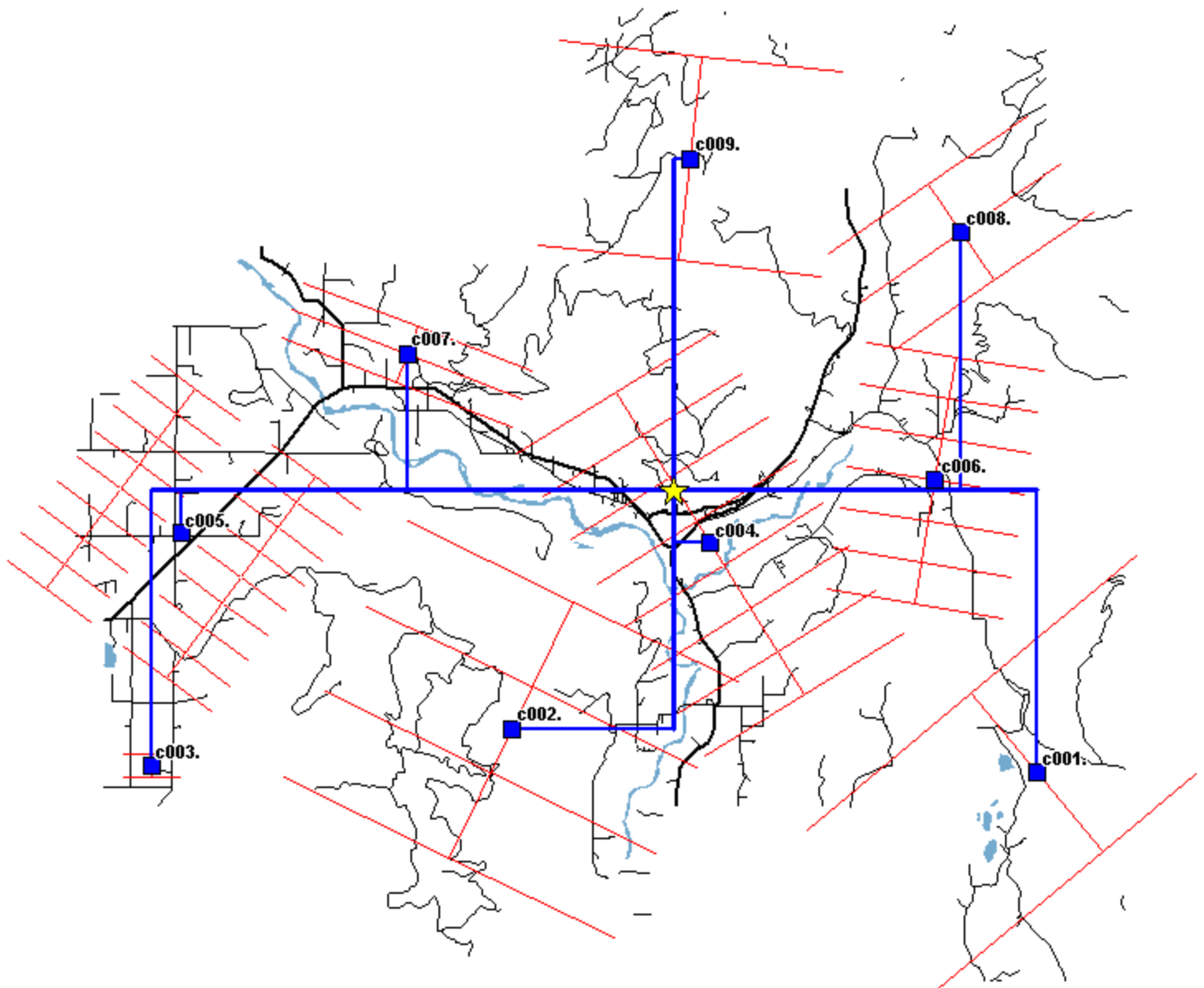
CSHRWAXX: HAI Network



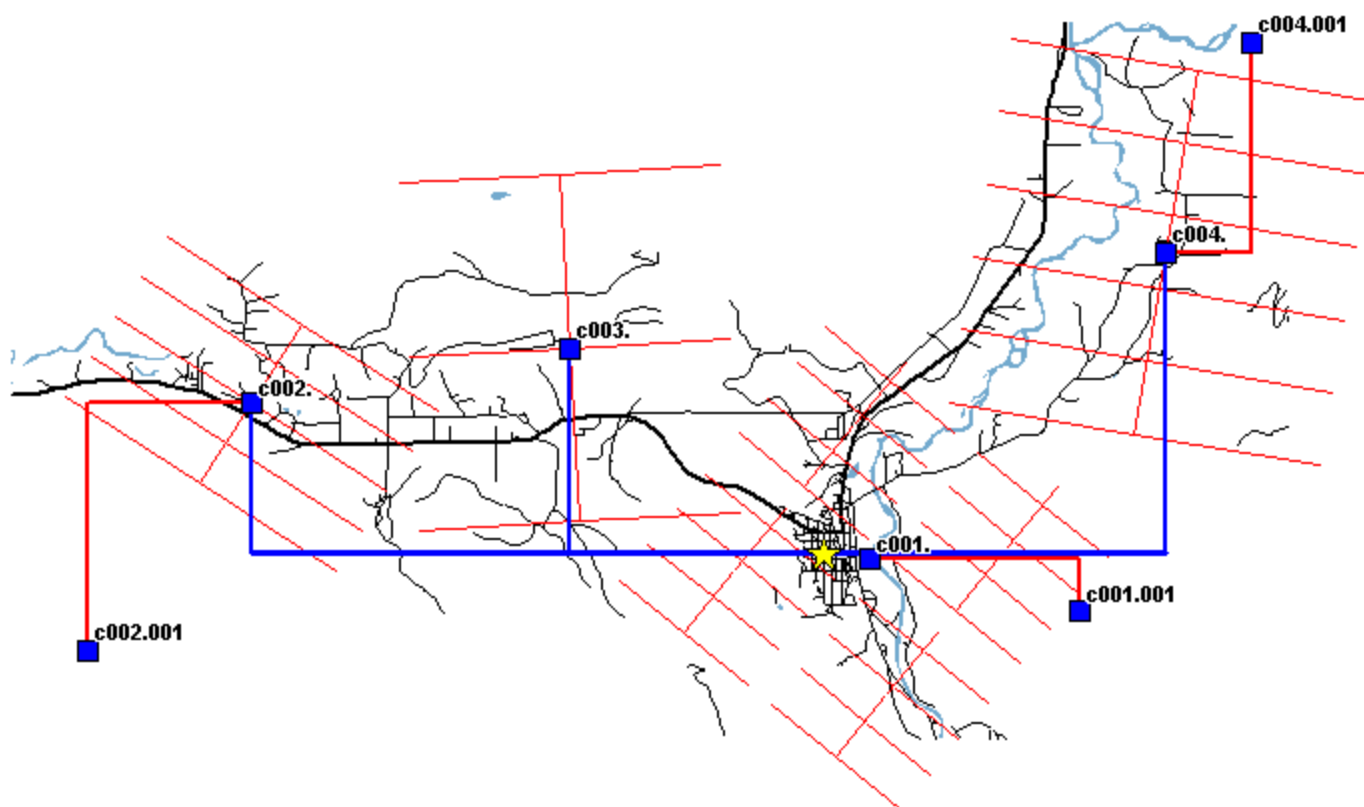
CSTRWAXA: HAI Network



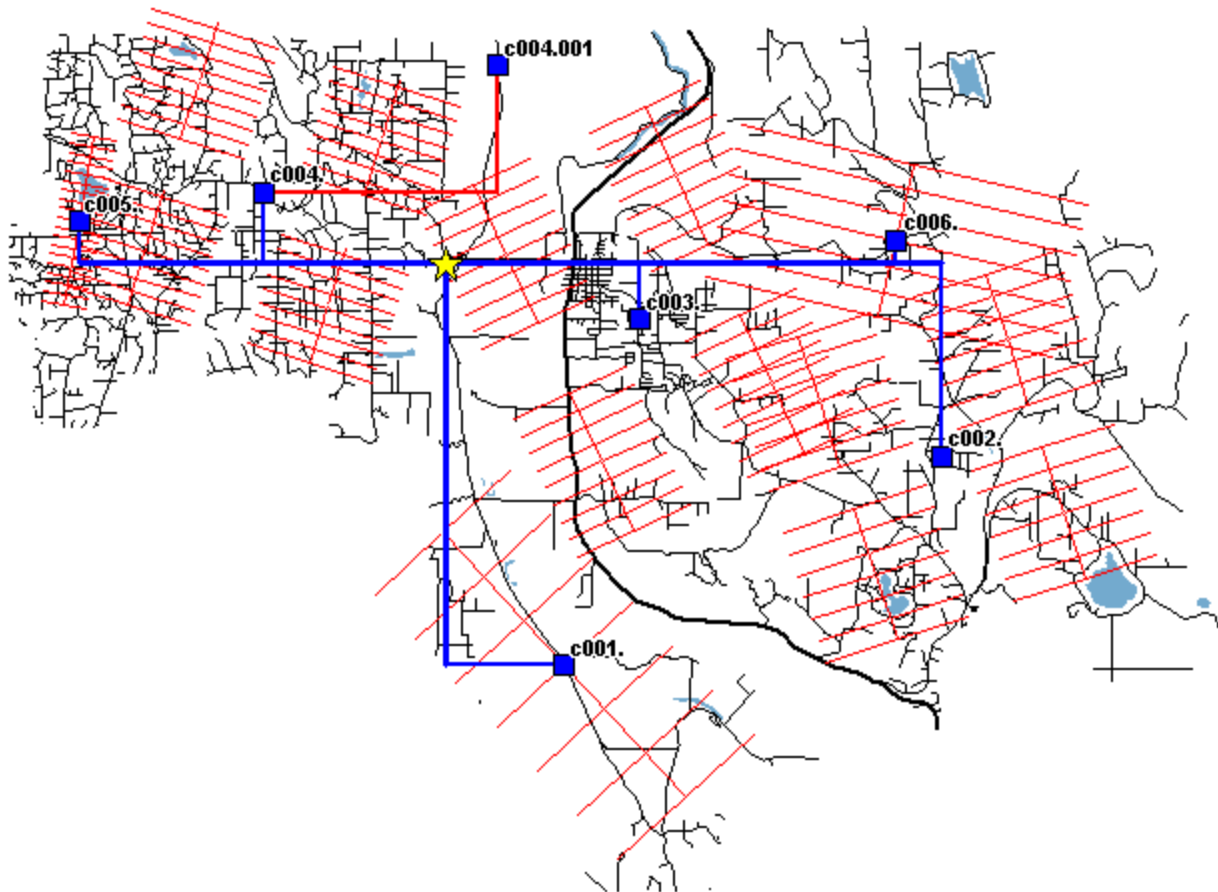
DMNGWAXA: HAI Network



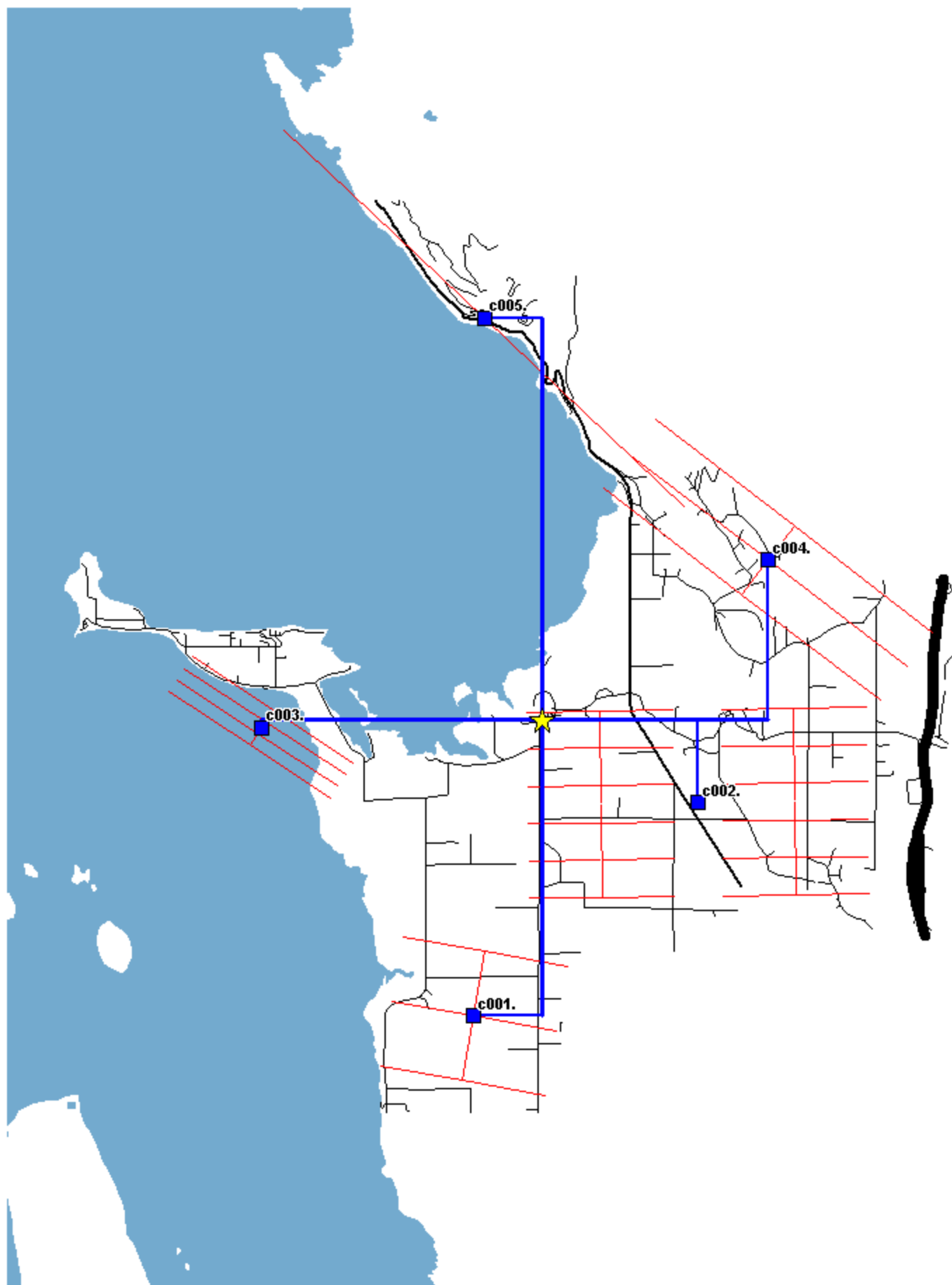
DRTNWAXX: HAI Network



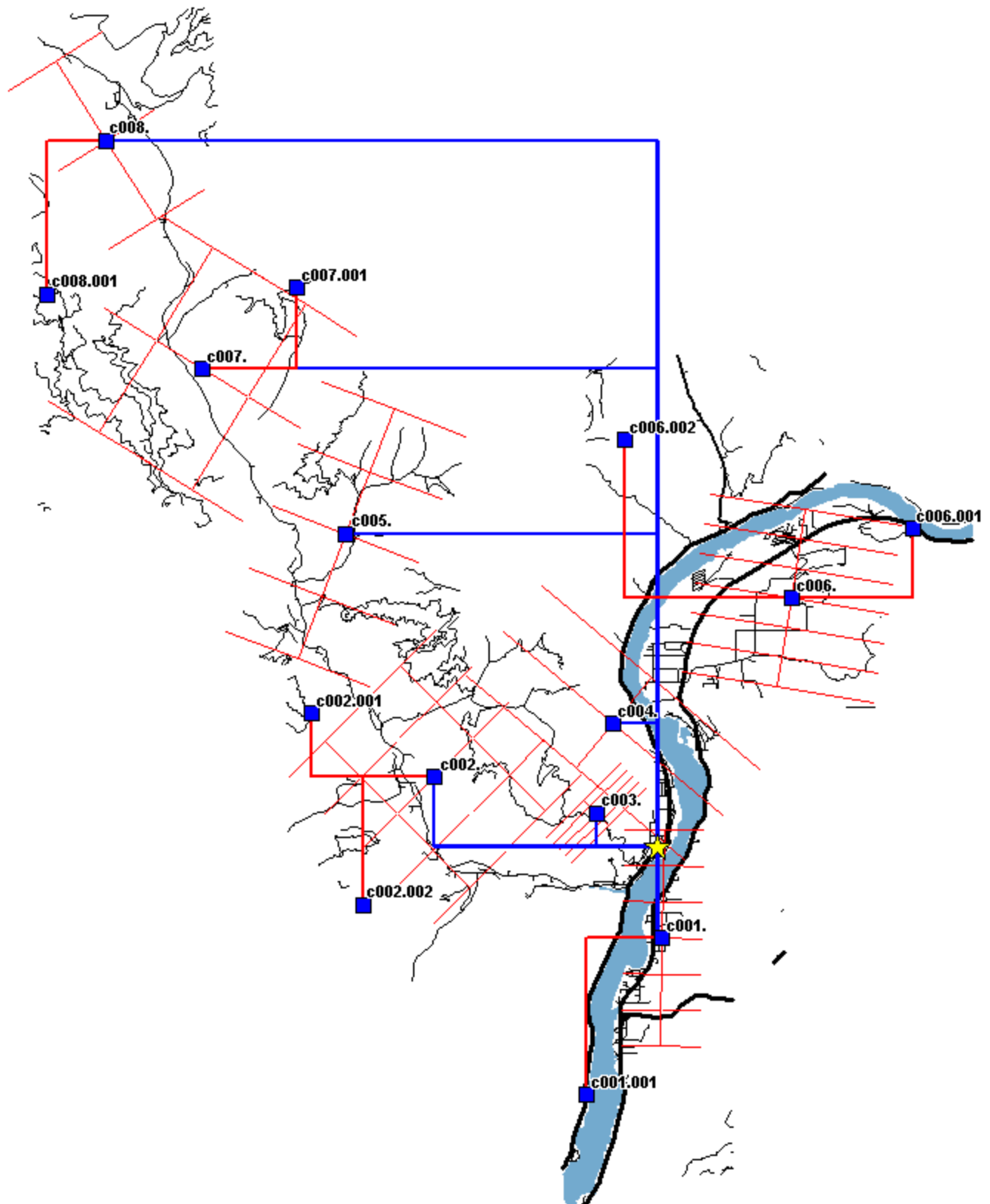
DVLLWAXX: HAI Network



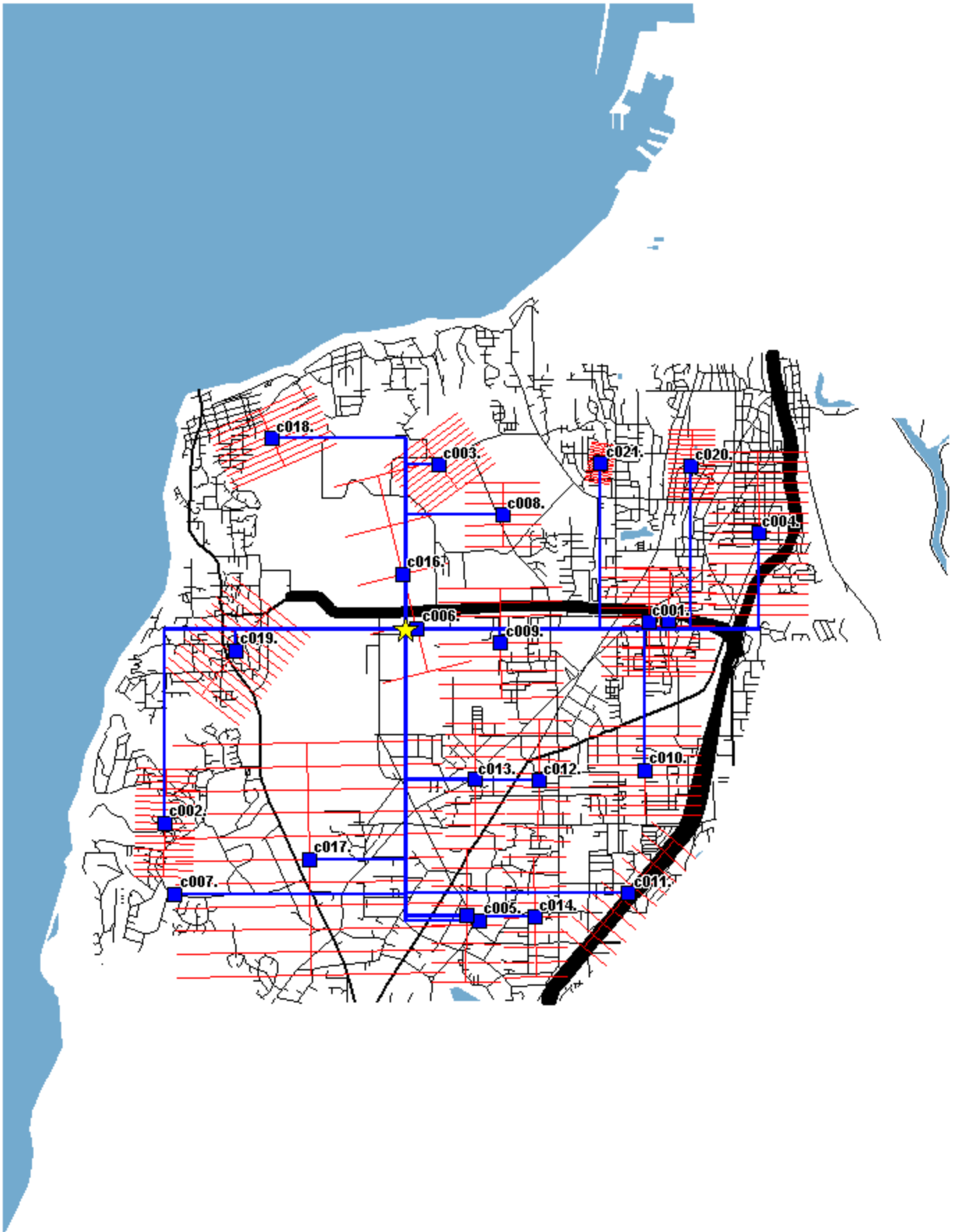
EDSNWAXX: HAI Network



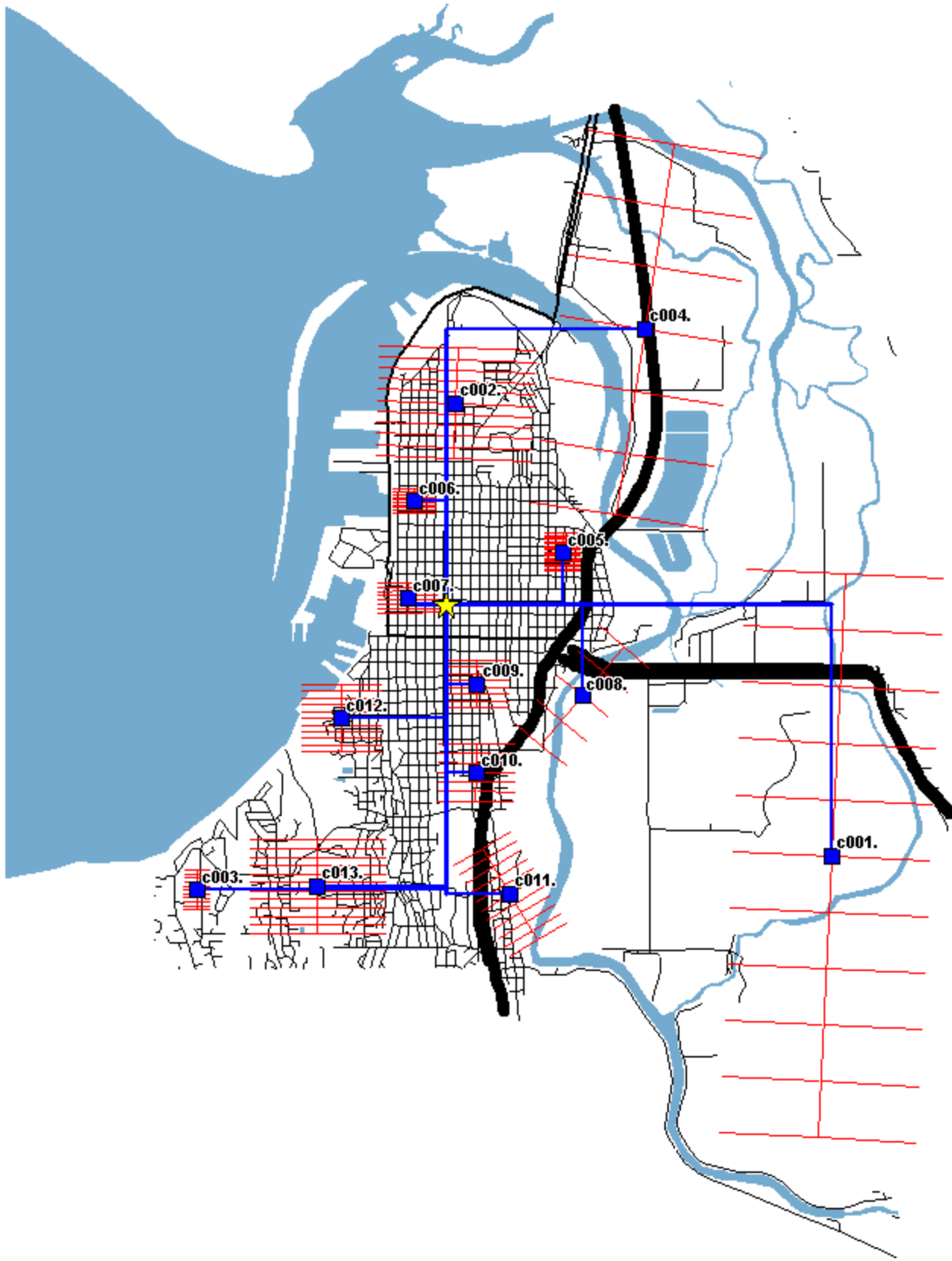
ENTTWAXX: HAI Network



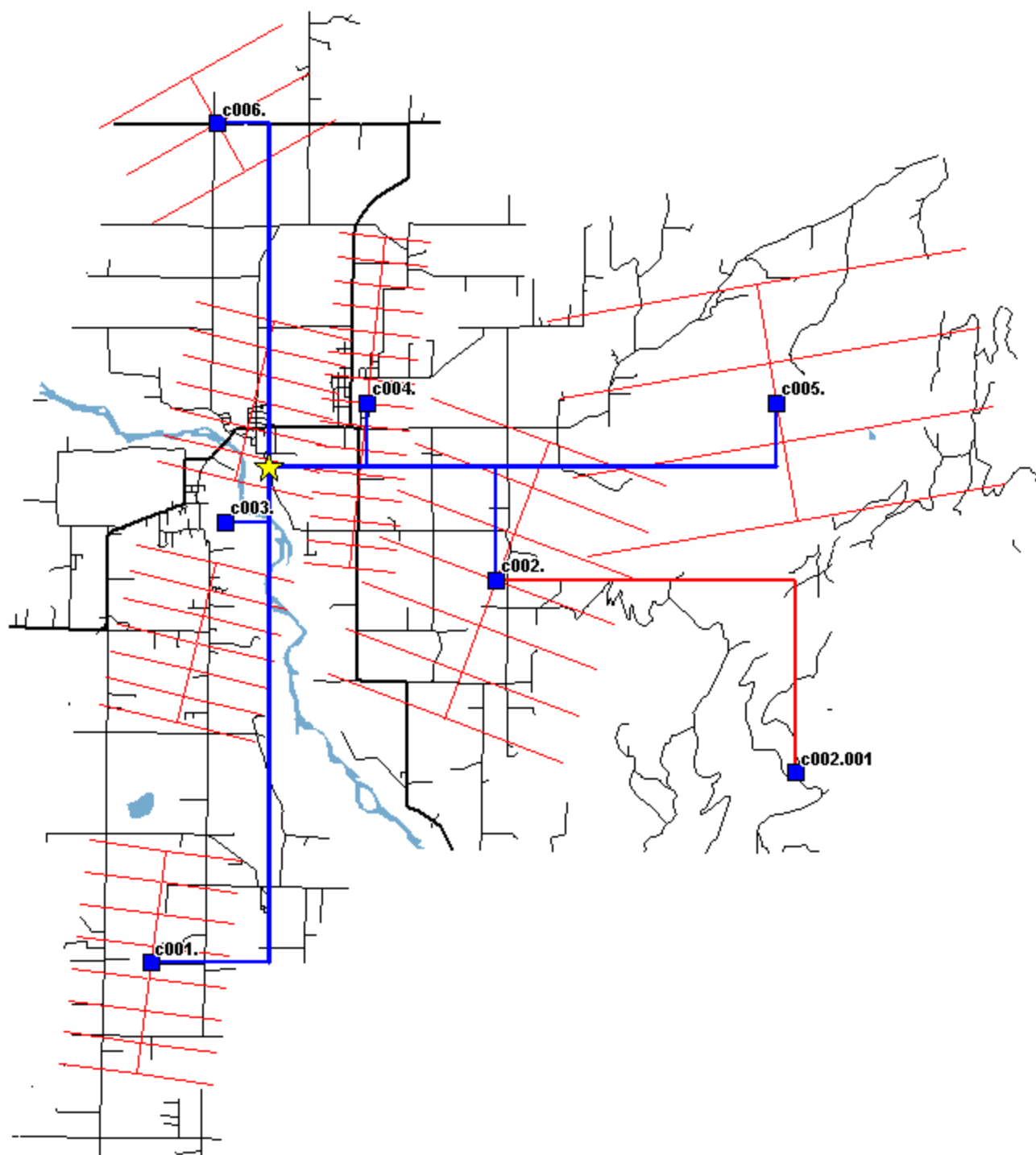
EVRTWAXC: HAI Network



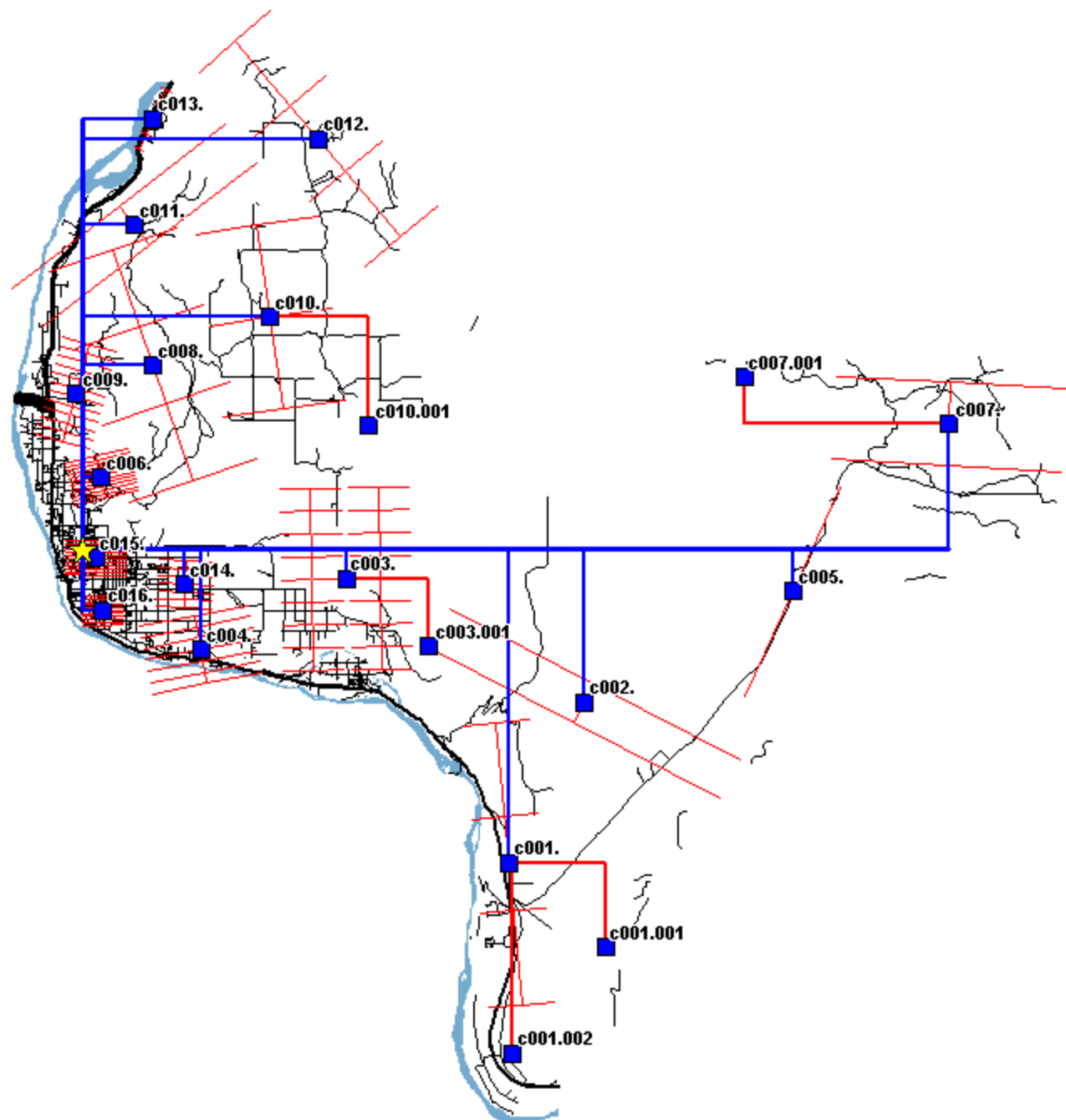
EVRTWAXF: HAI Network



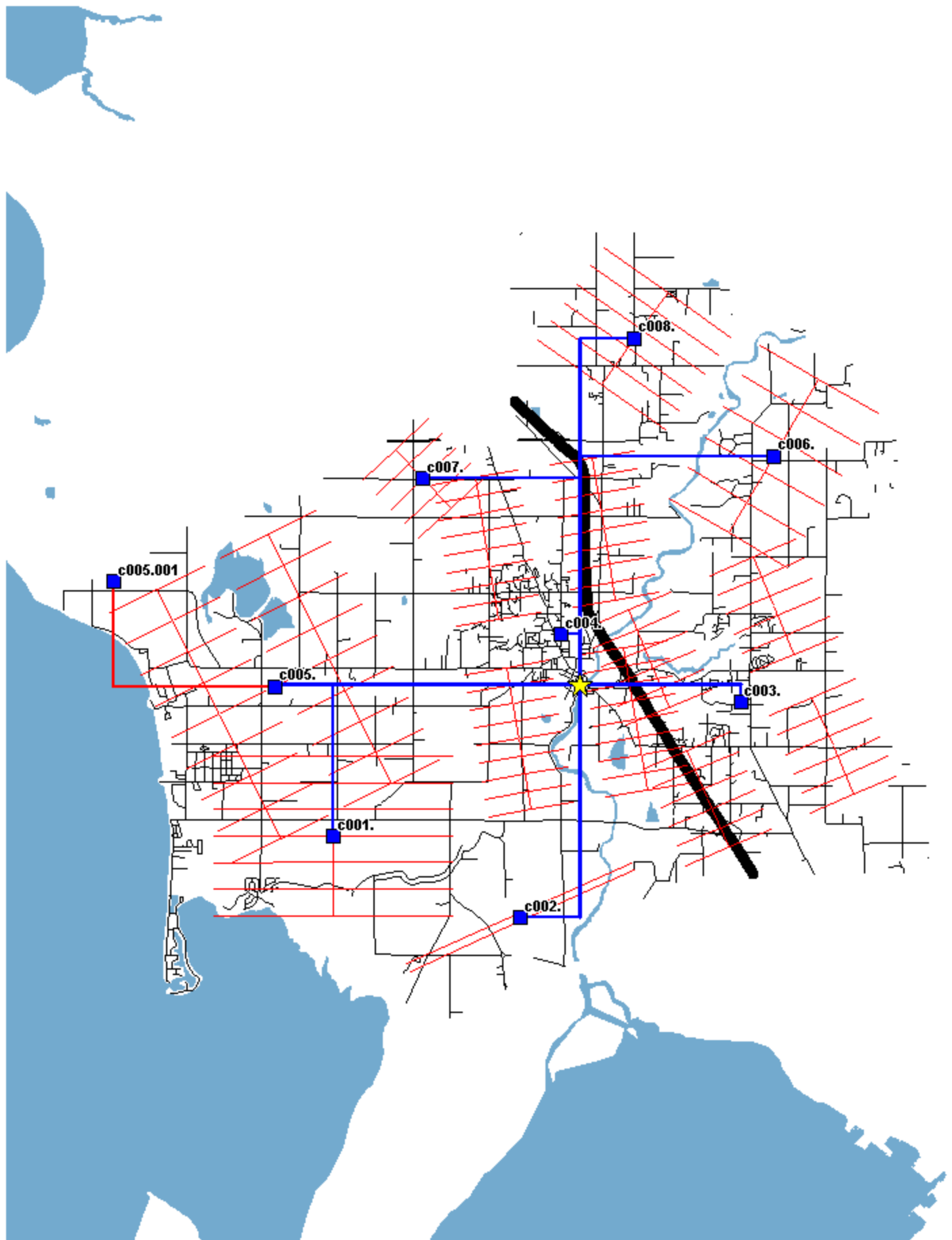
EVSNWAXX: HAI Network



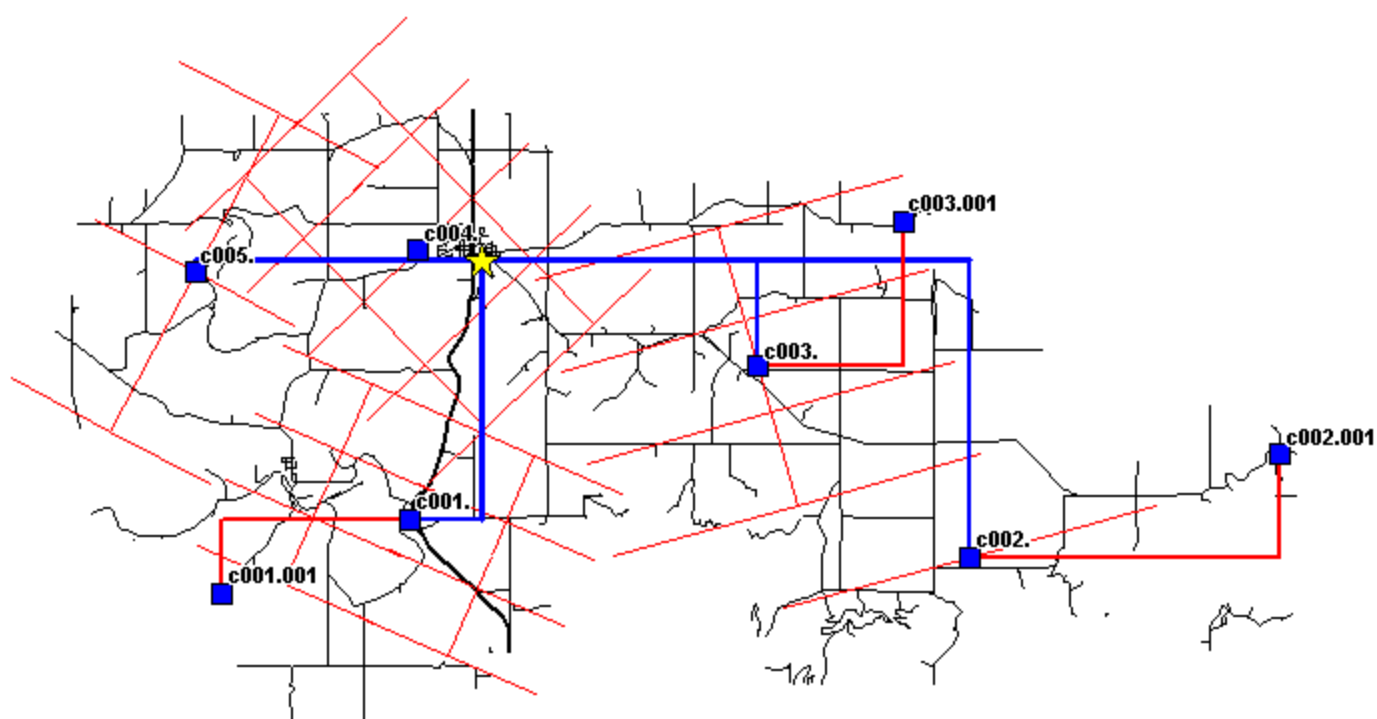
EWNCWAXA: HAI Network



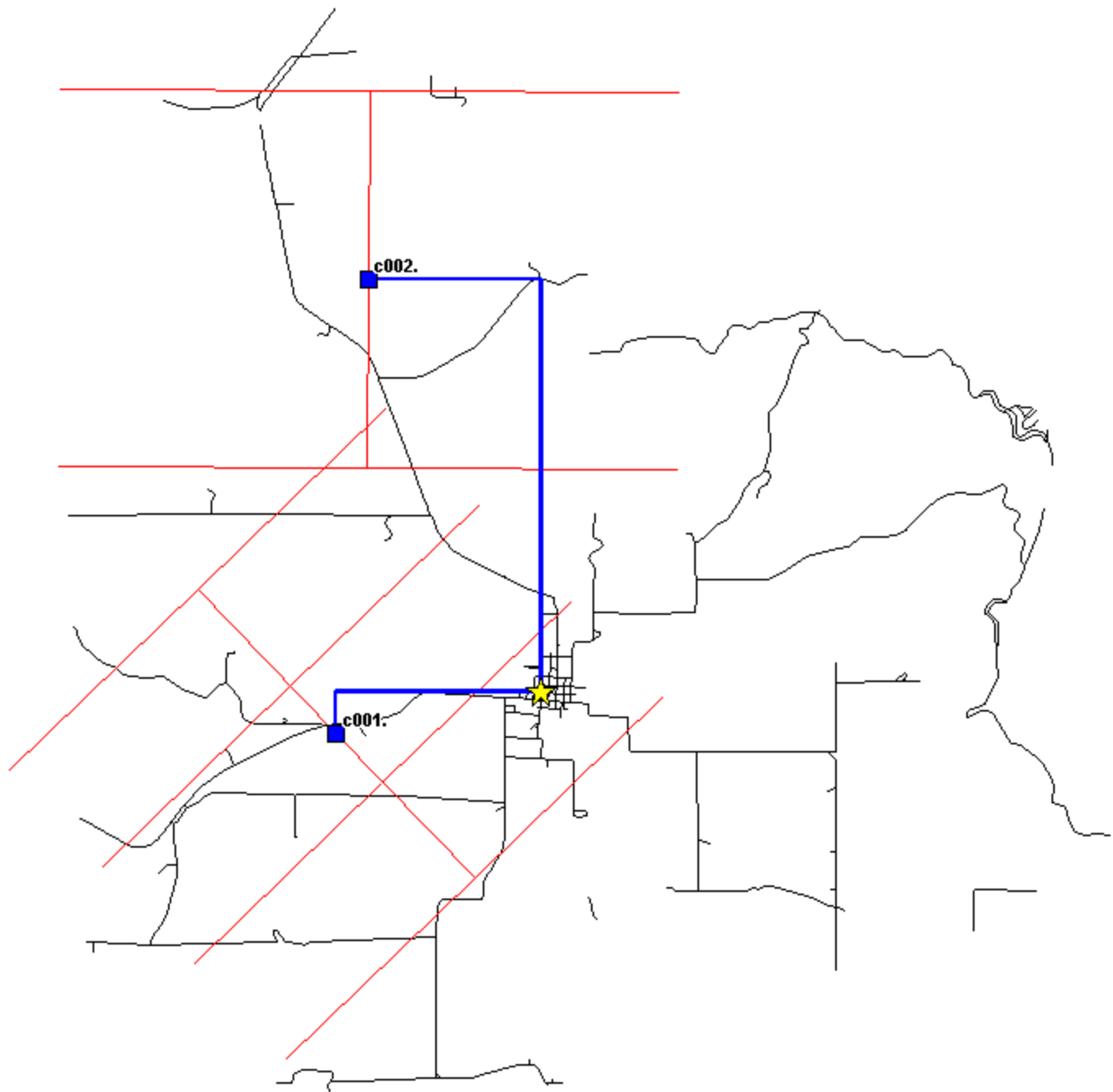
FNDLWAXA: HAI Network



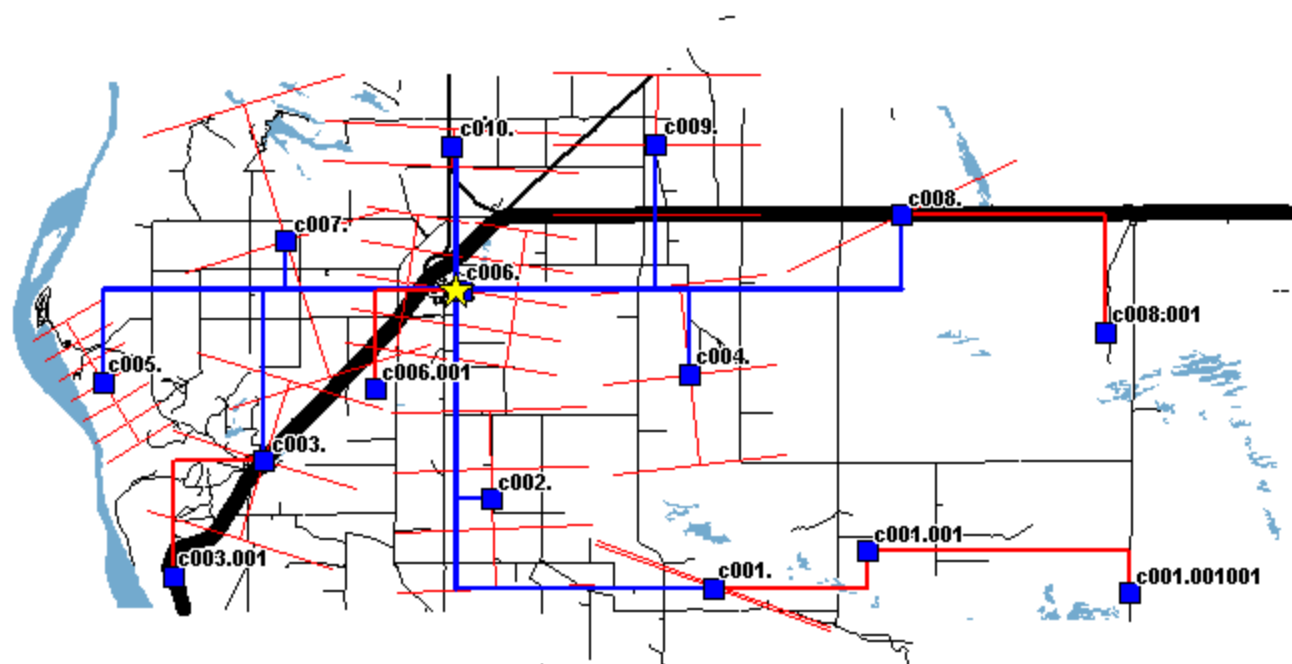
FRFDWAXA: HAI Network



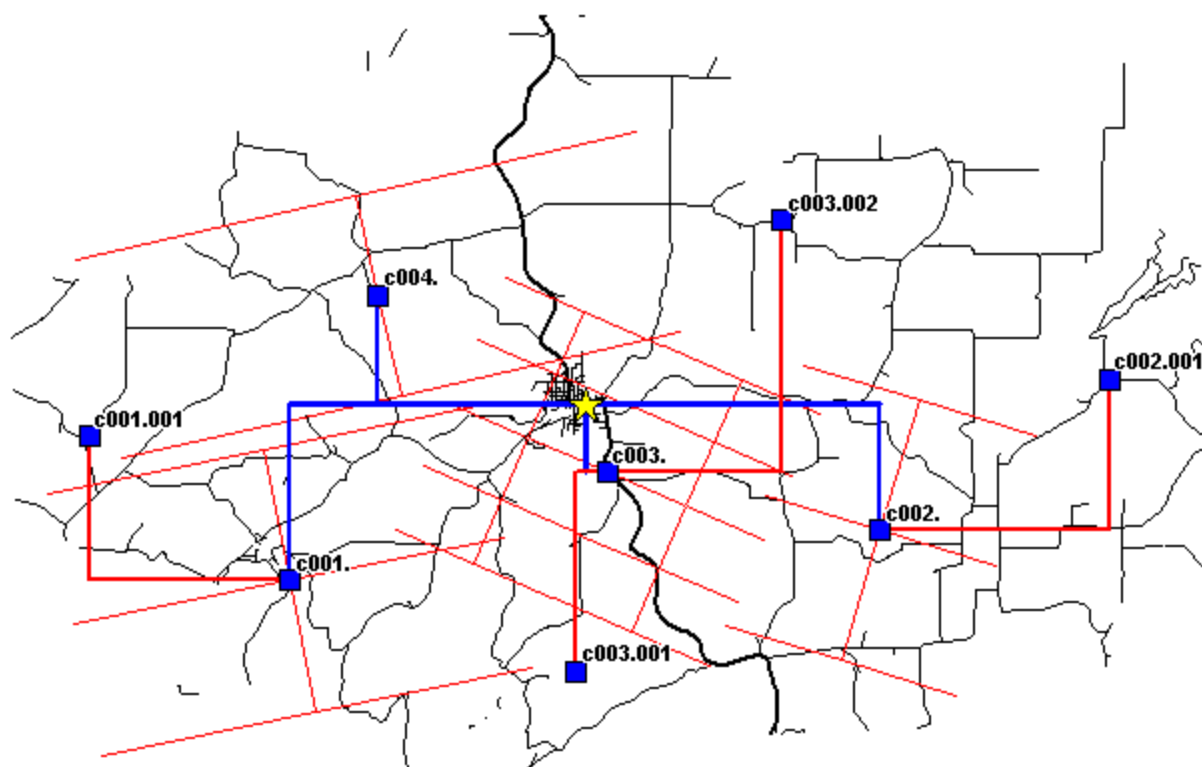
FRTNWAXX: HAI Network



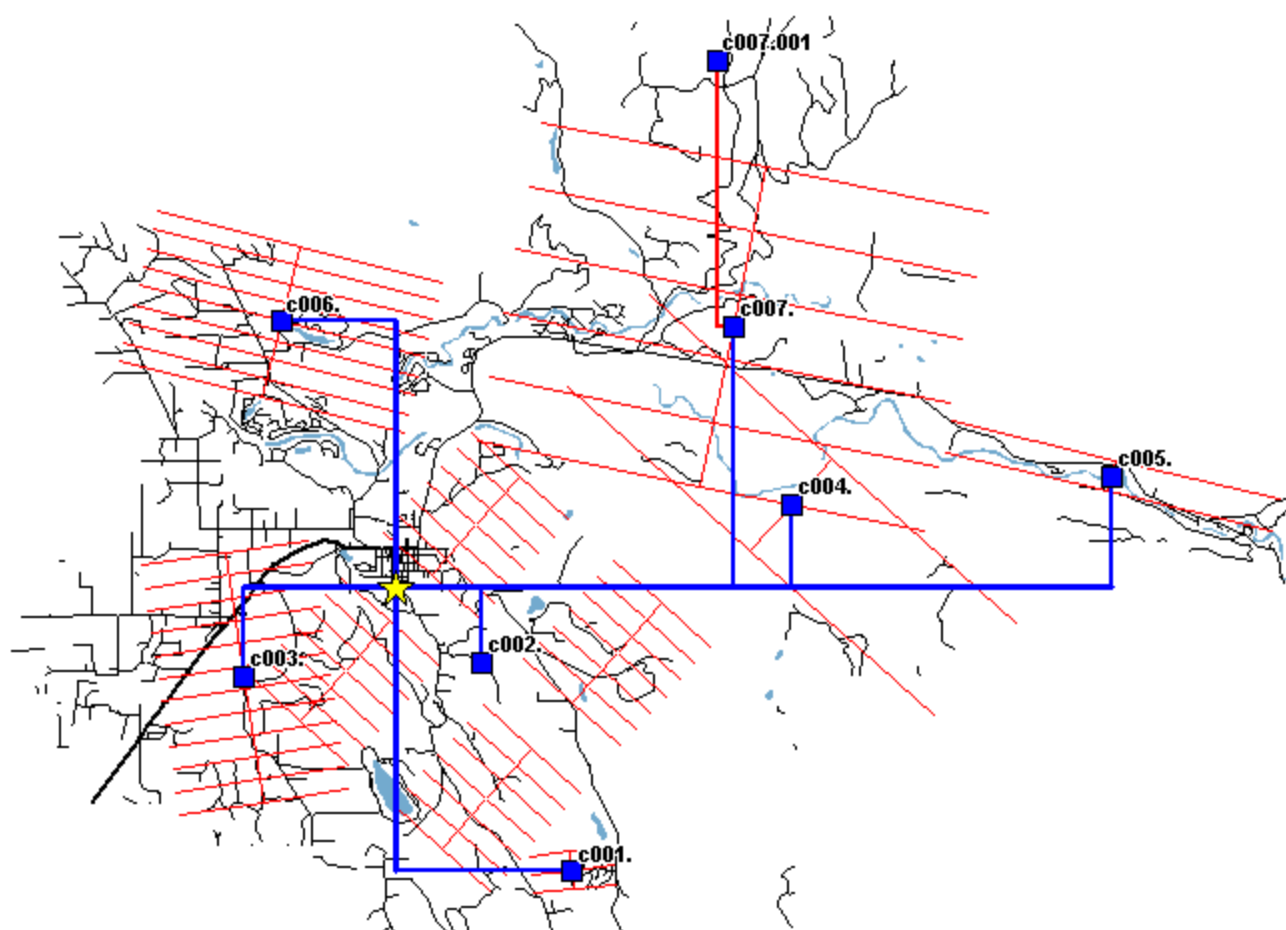
GERGWAXX: HAI Network



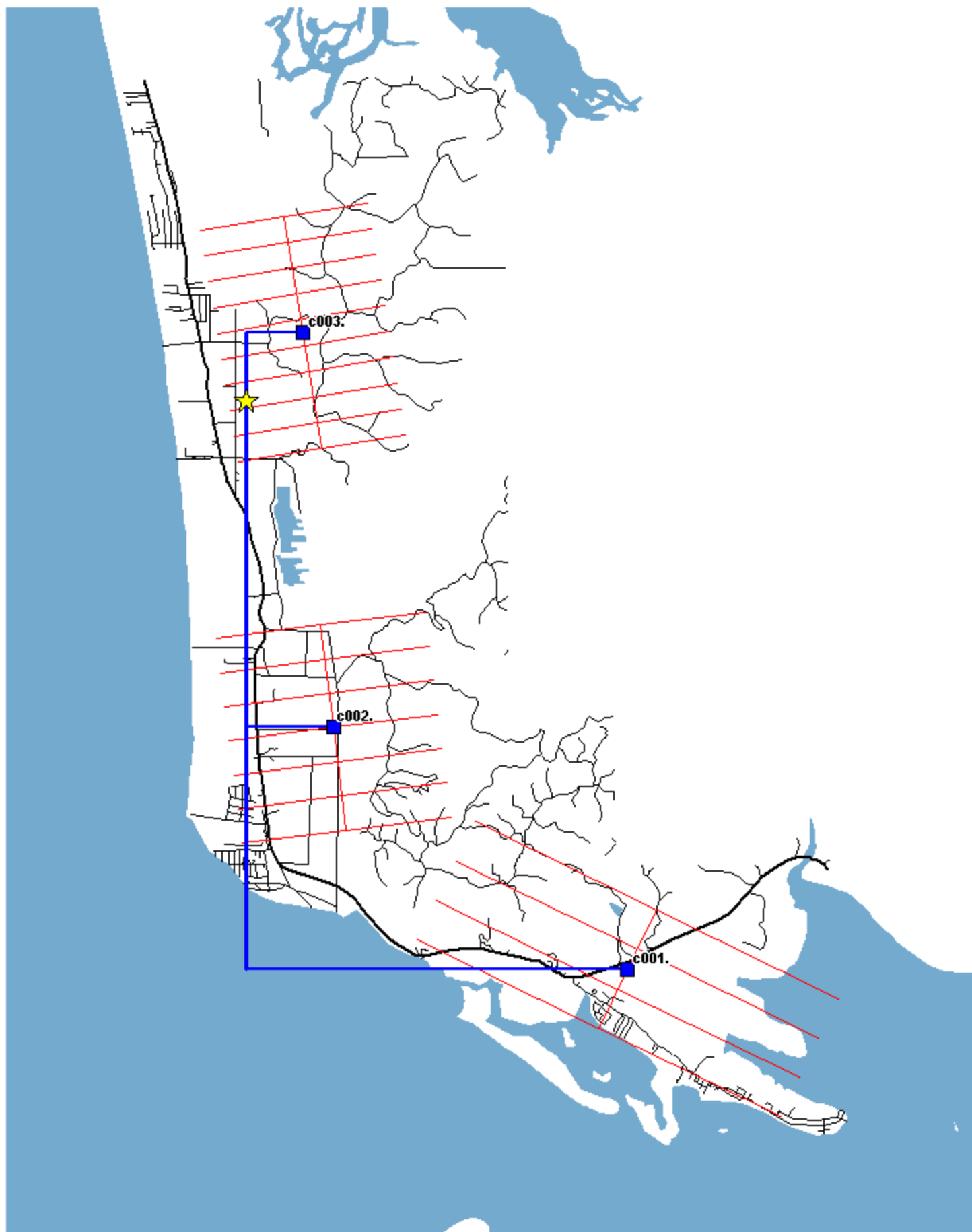
GRFDWAXX: HAI Network



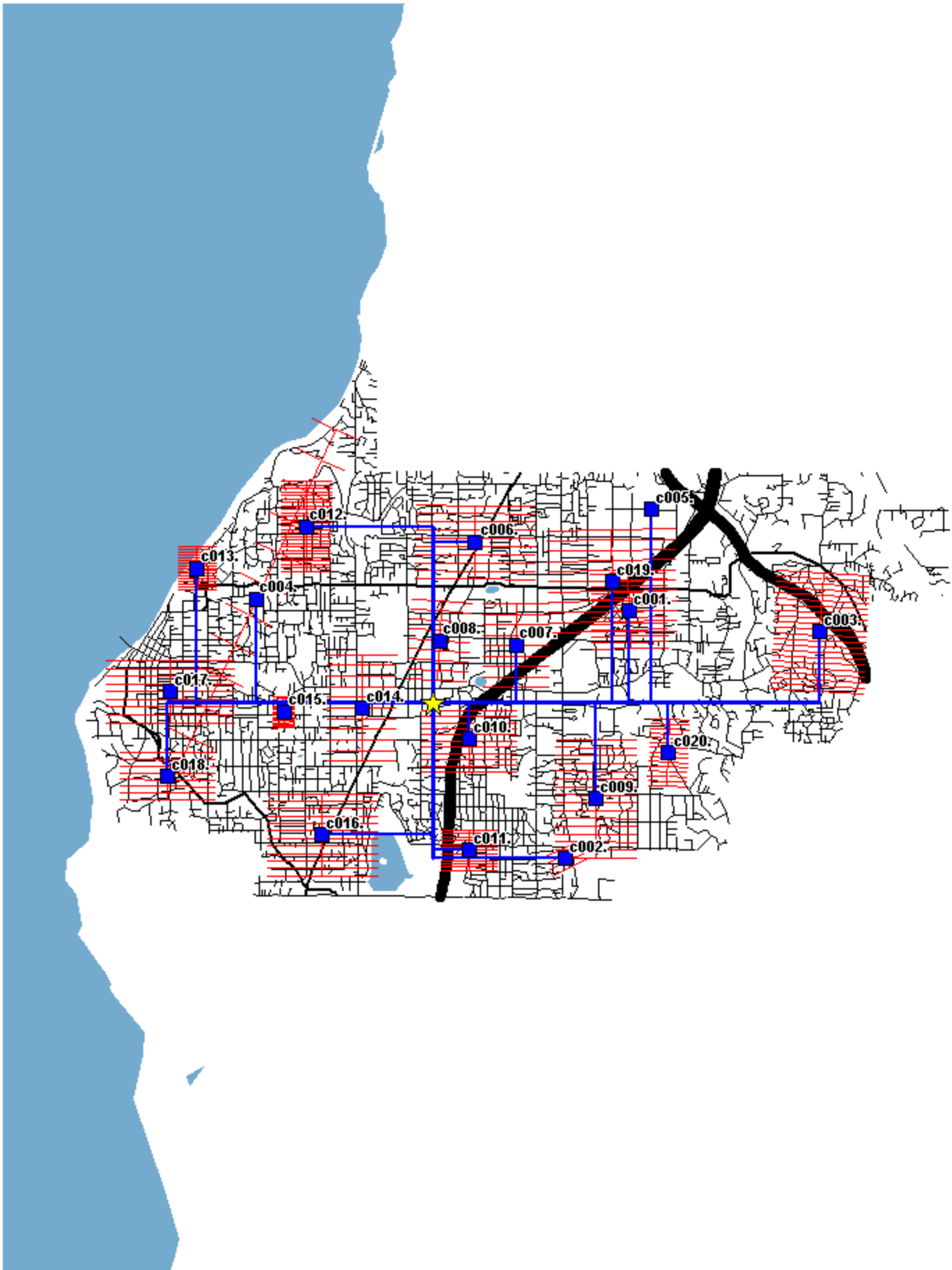
GRFLWAXX: HAI Network



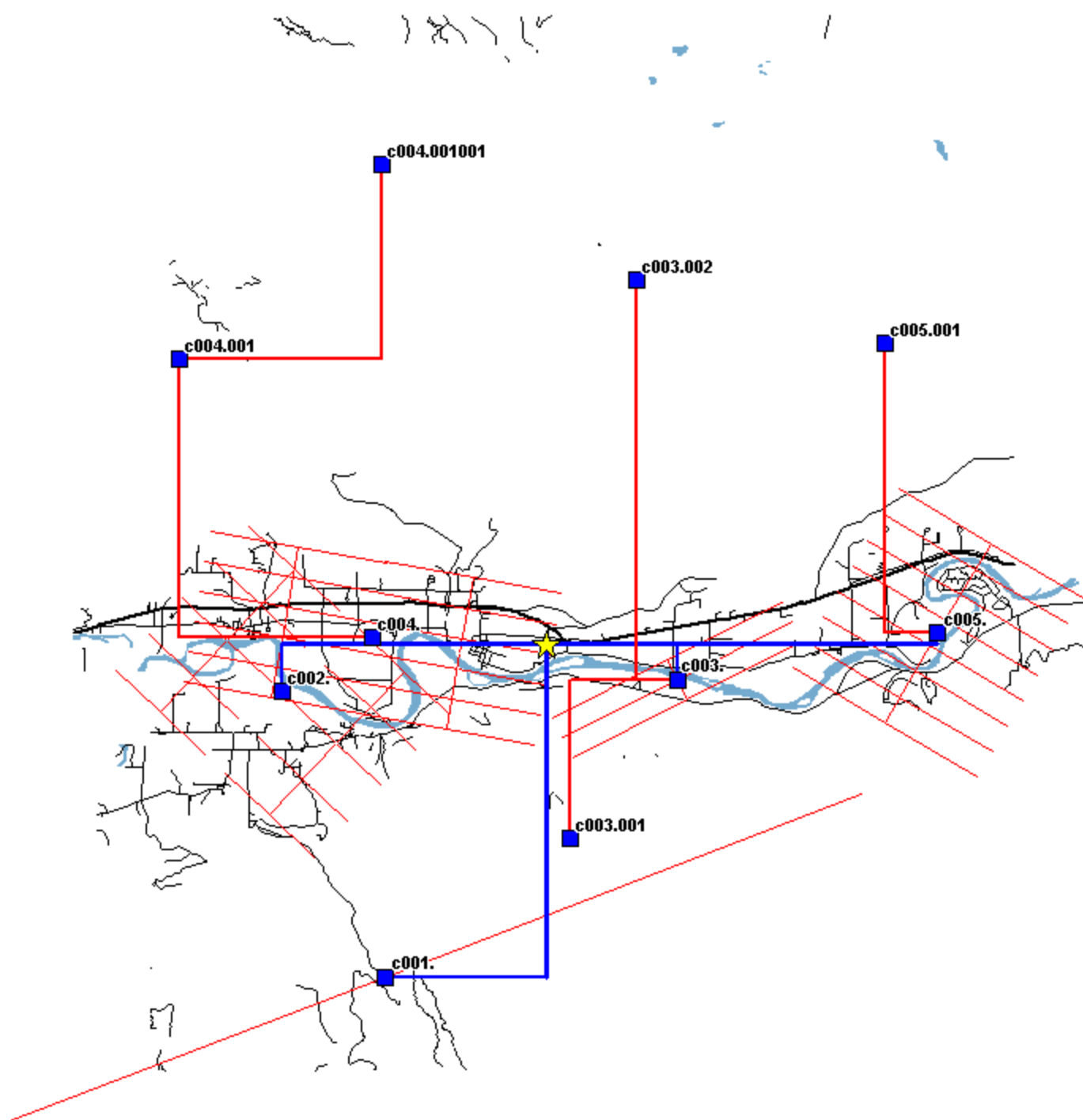
GRLDWAXX: HAI Network



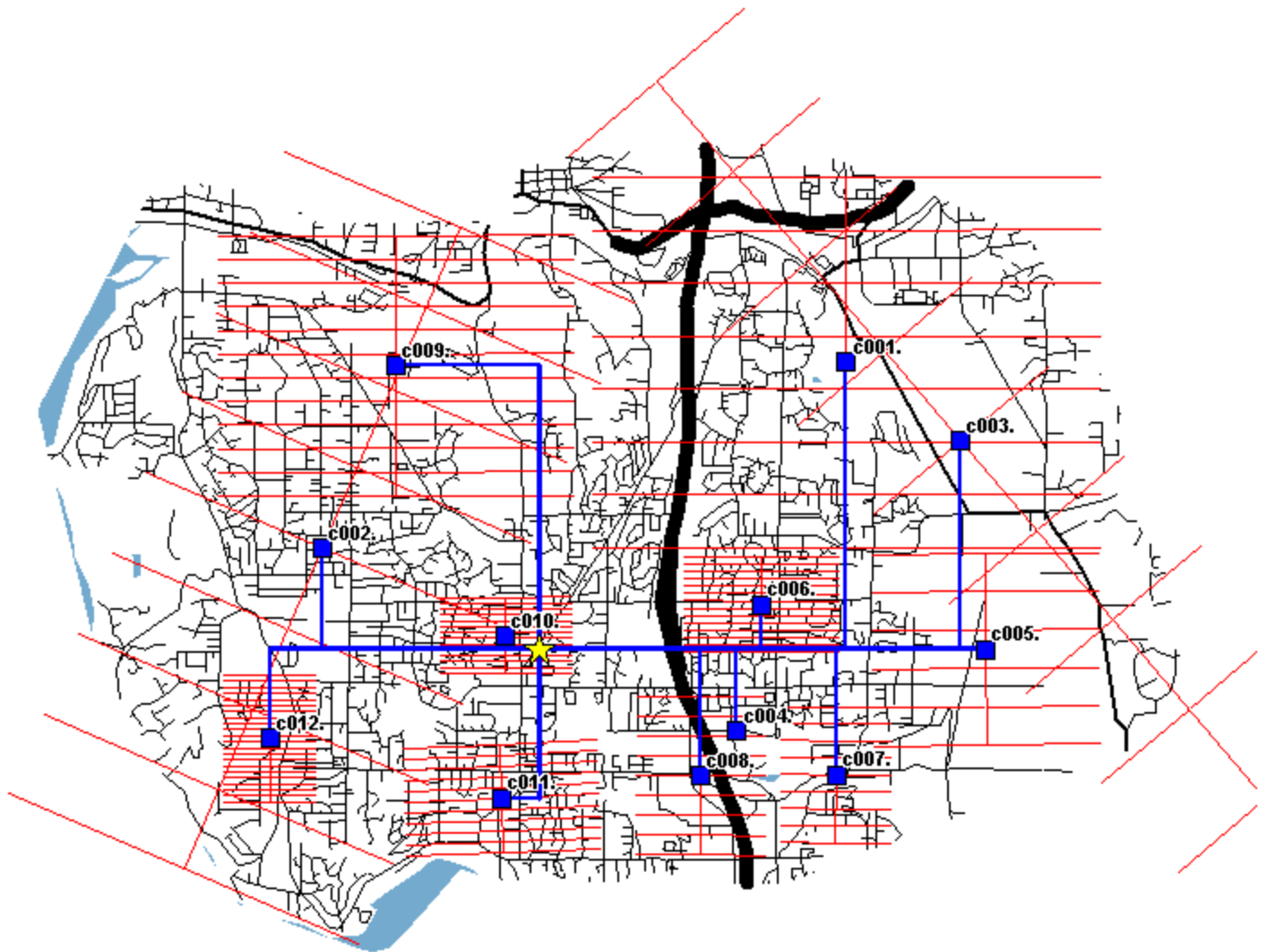
HLLKWAXX: HAI Network



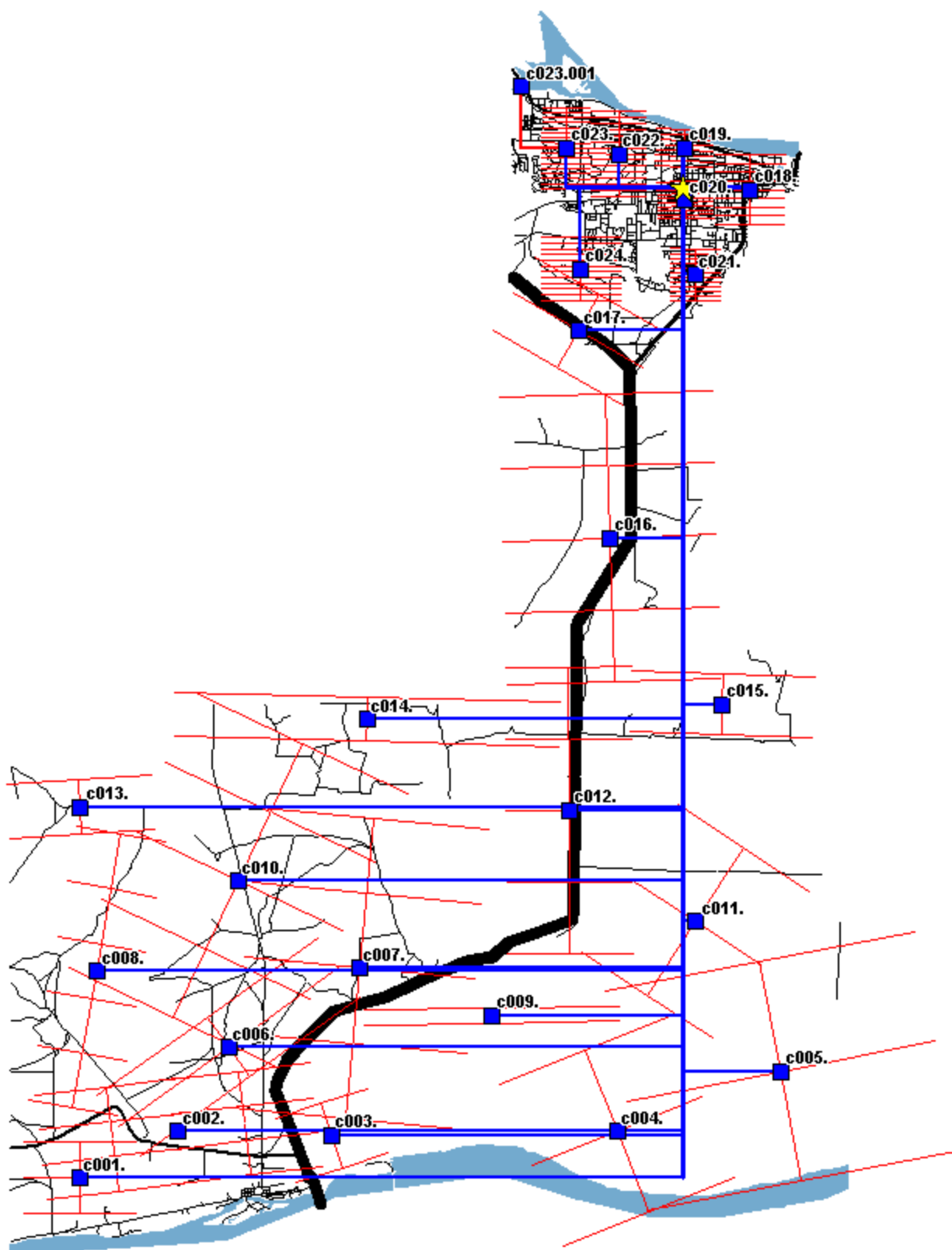
HMTNWAXA: HAI Network



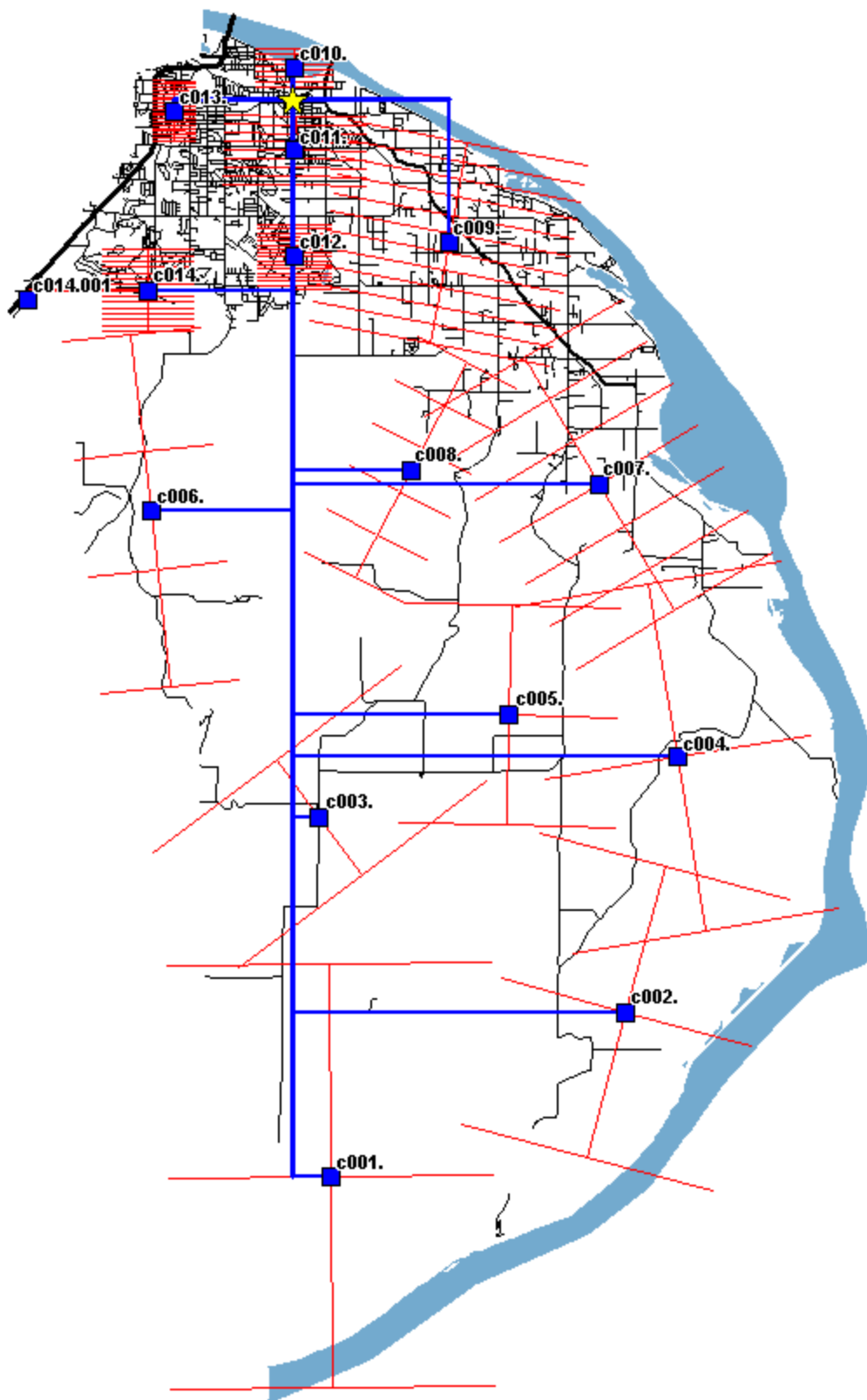
JUNTWAXA: HAI Network



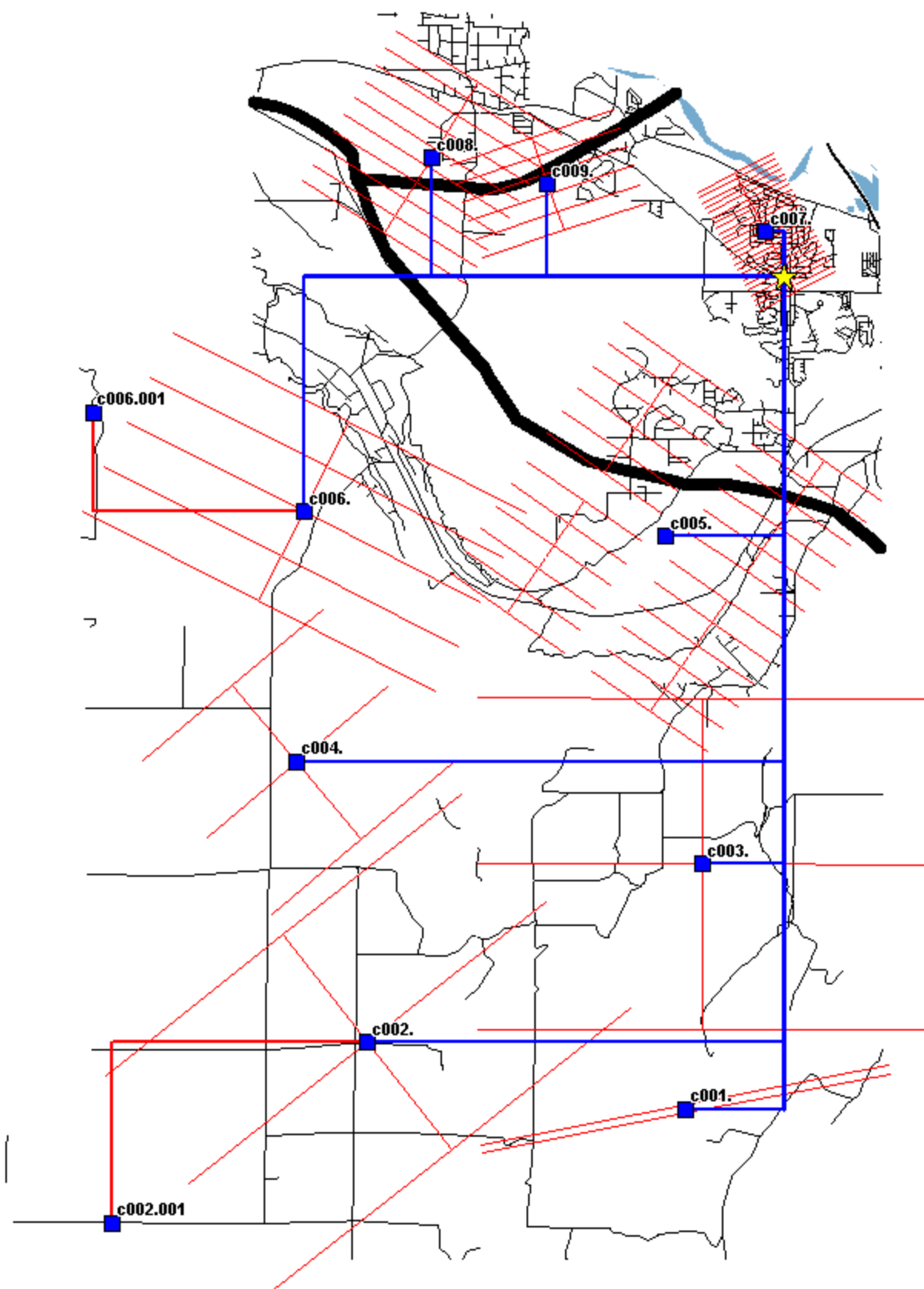
KNWCWAXA: HAI Network



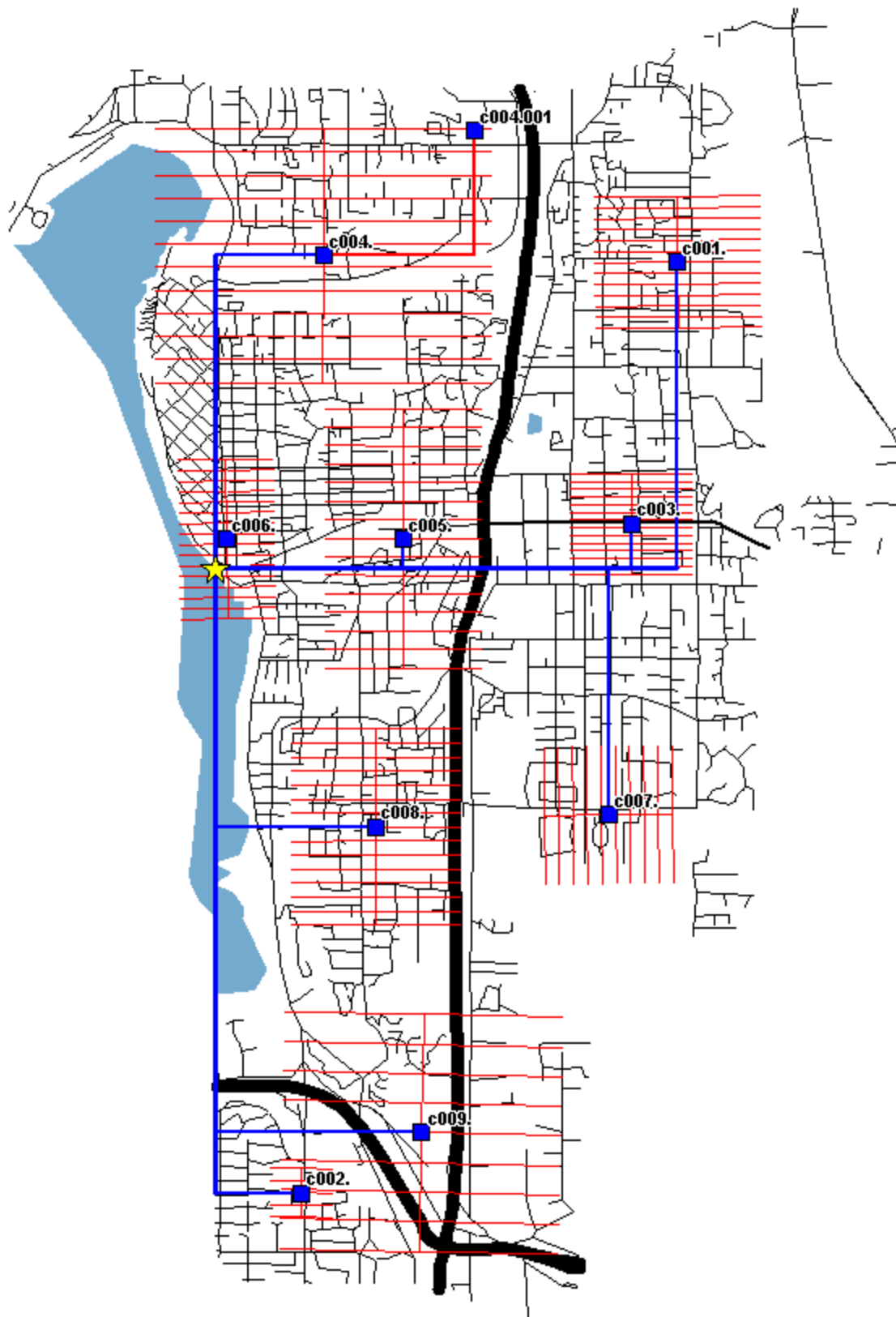
KNWCWAXB: HAI Network



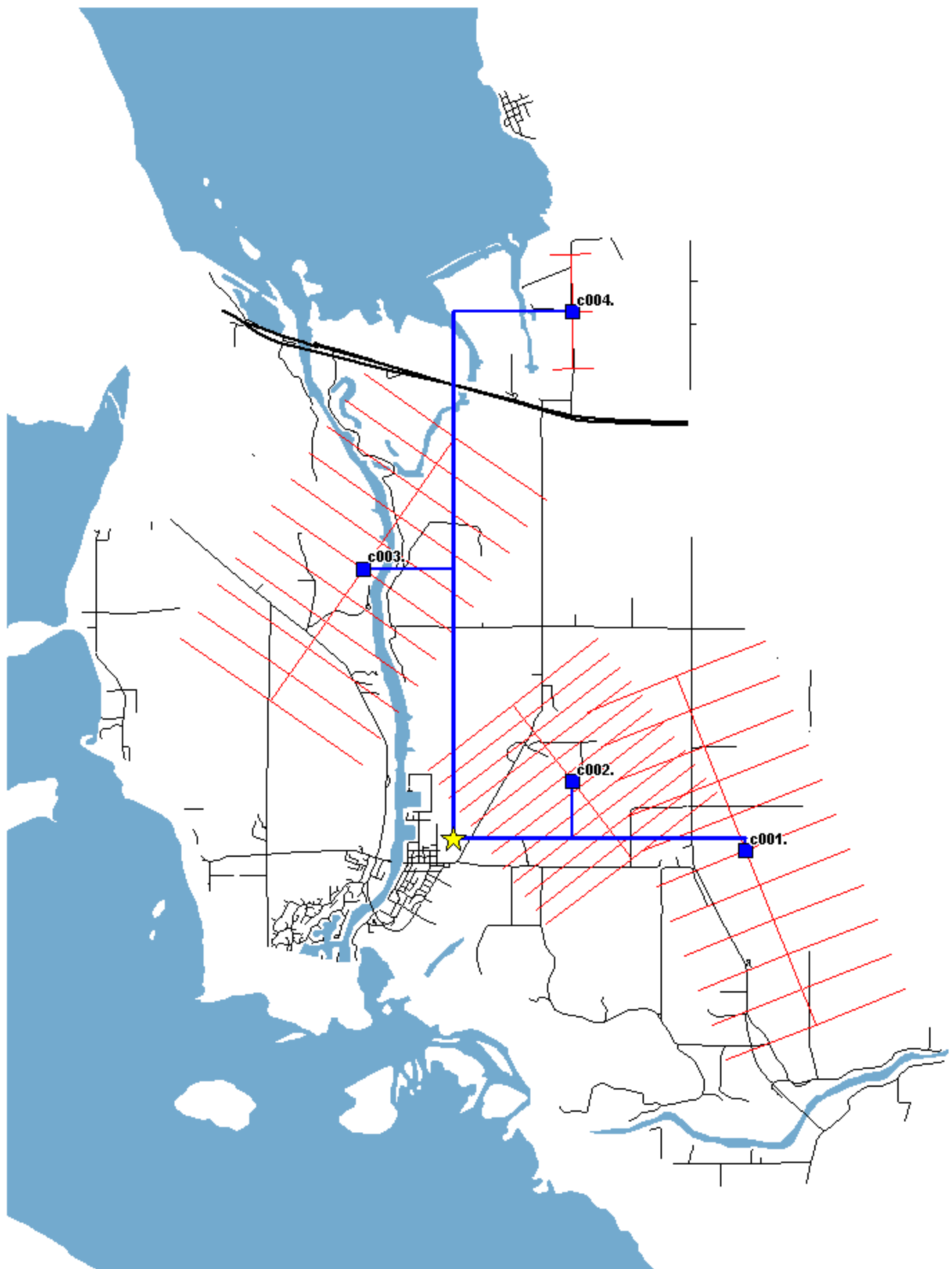
KNWCWAXC: HAI Network



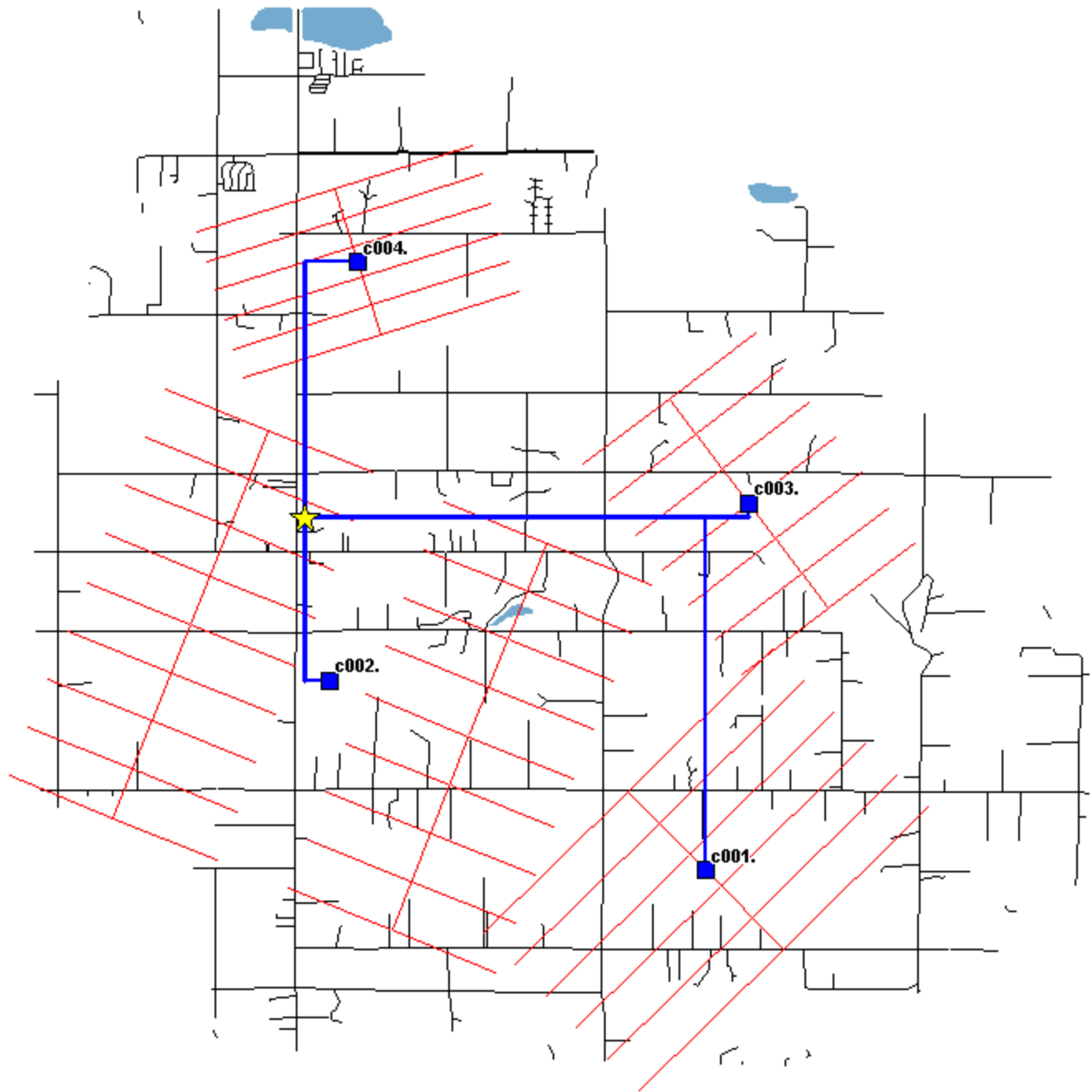
KRLDWAXX: HAI Network



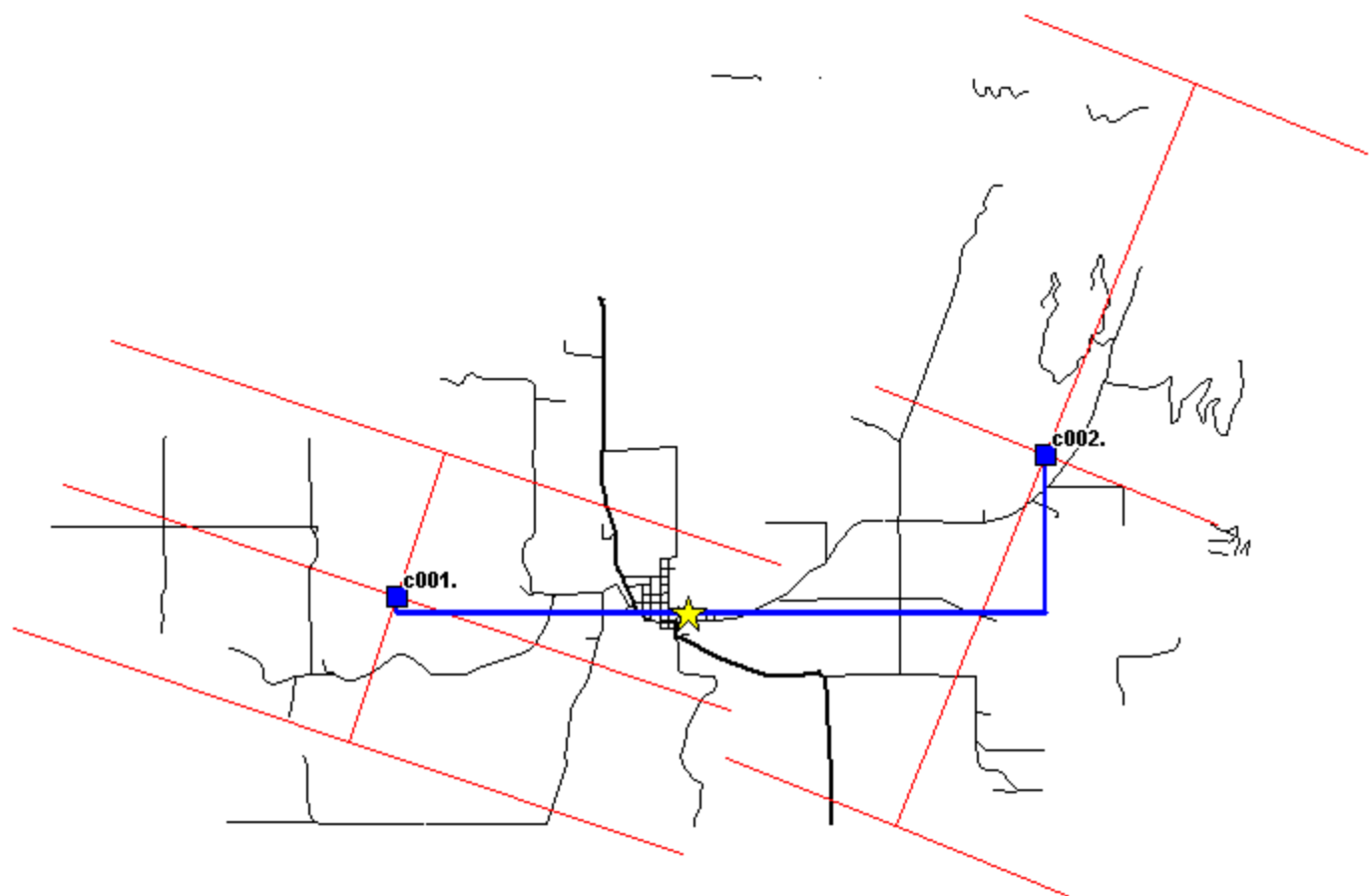
LACNWAXX: HAI Network



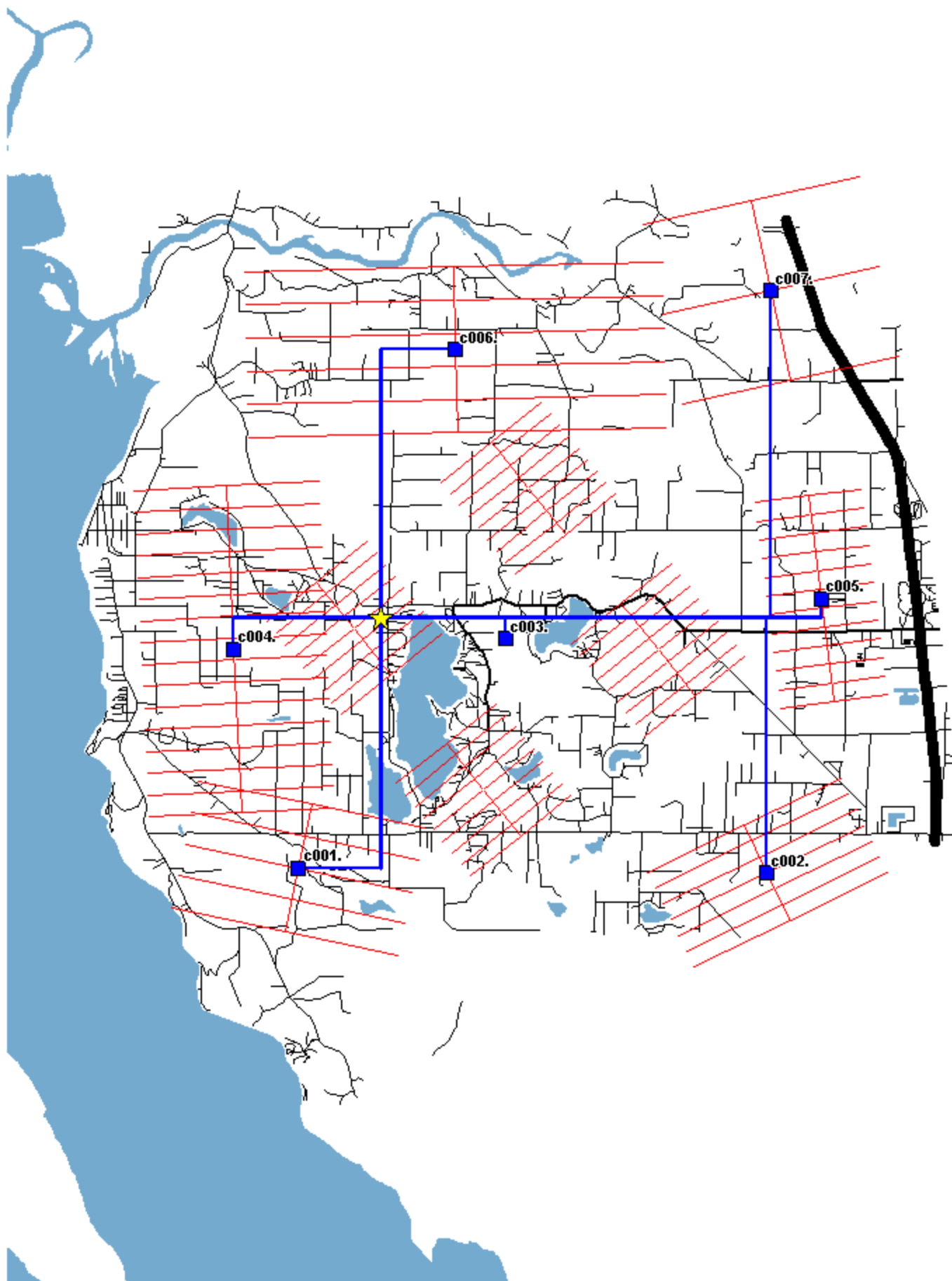
LARLWAXX: HAI Network



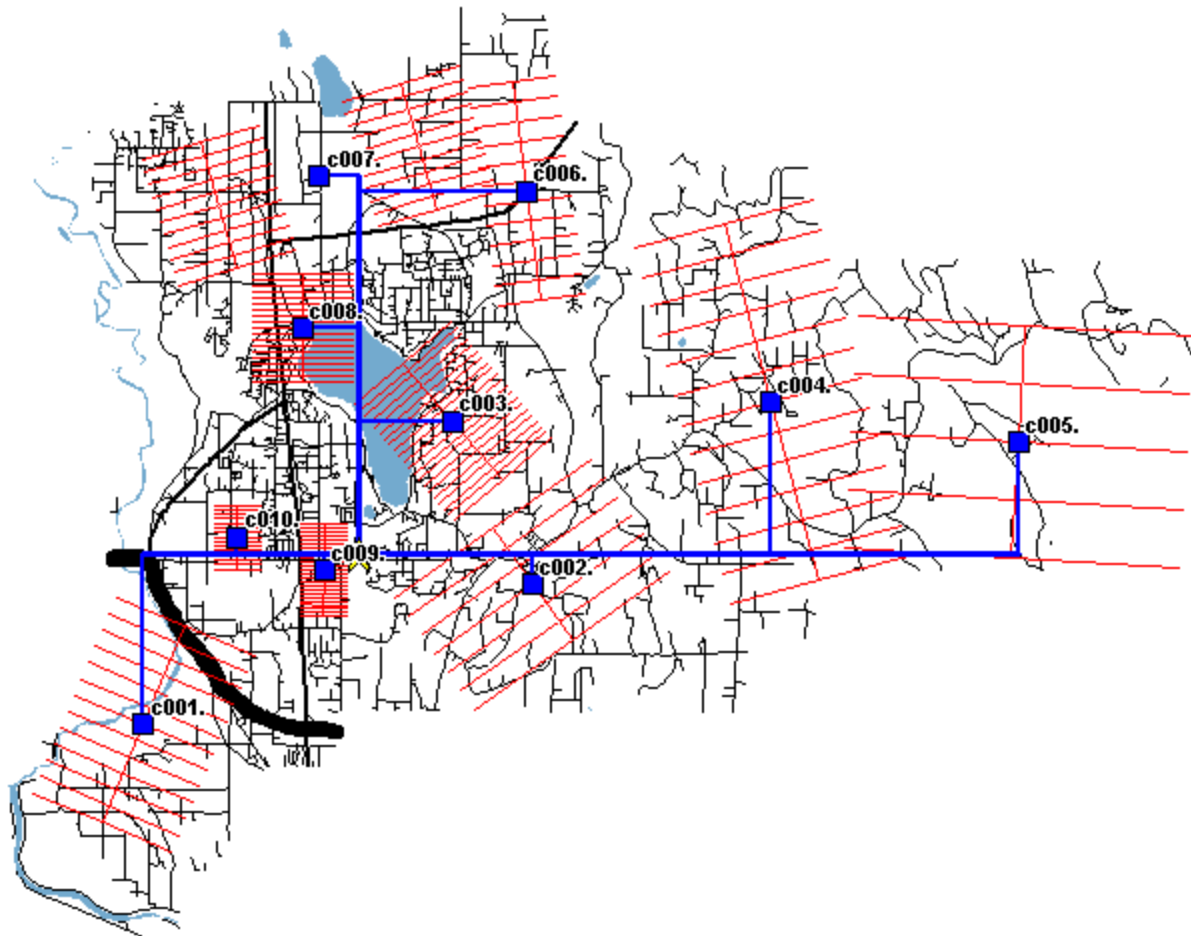
LATHWAXA: HAI Network



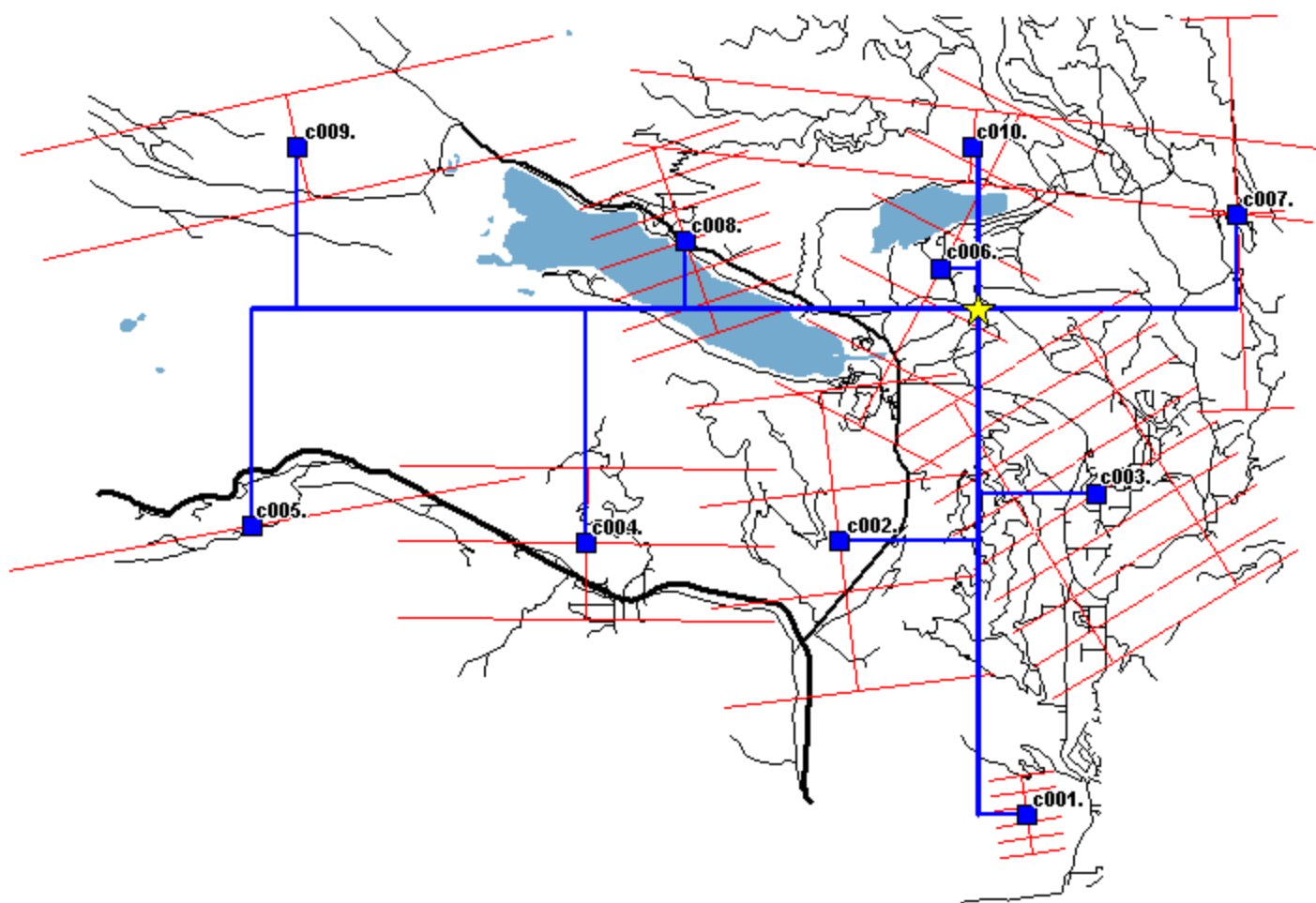
LKGWWAXA: HAI Network



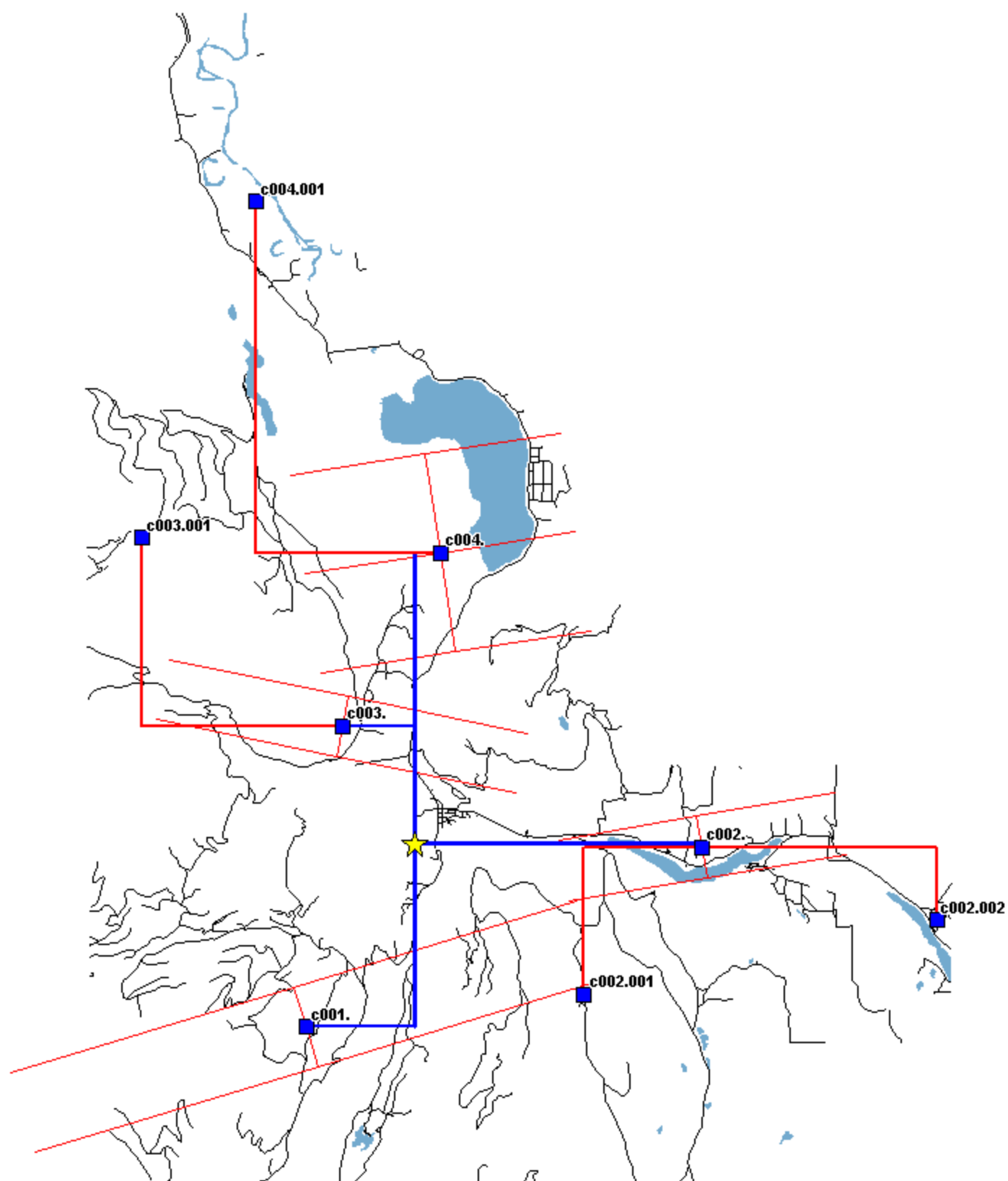
LKSTWAXA: HAI Network



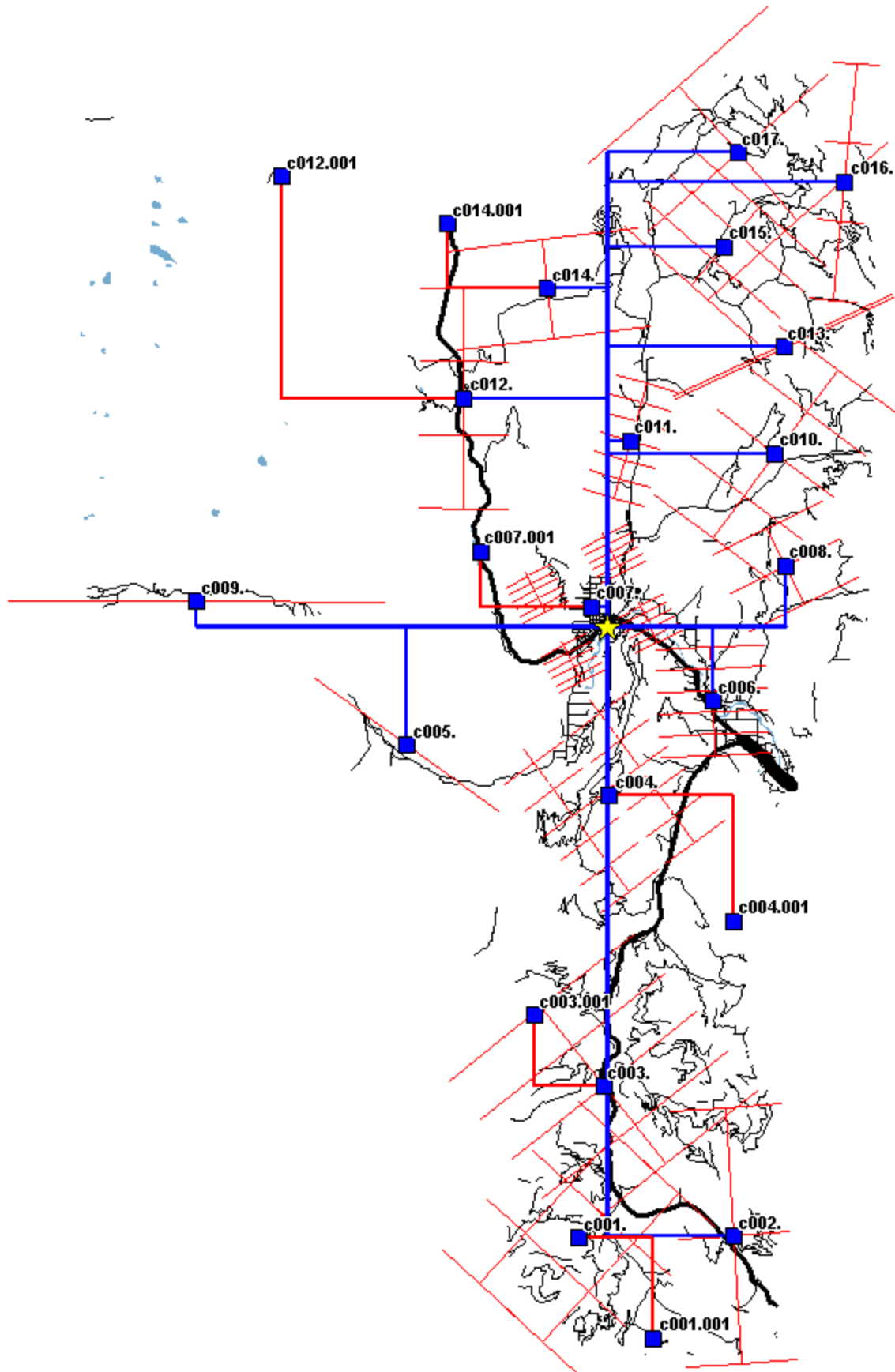
LKWNWAXA: HAI Network



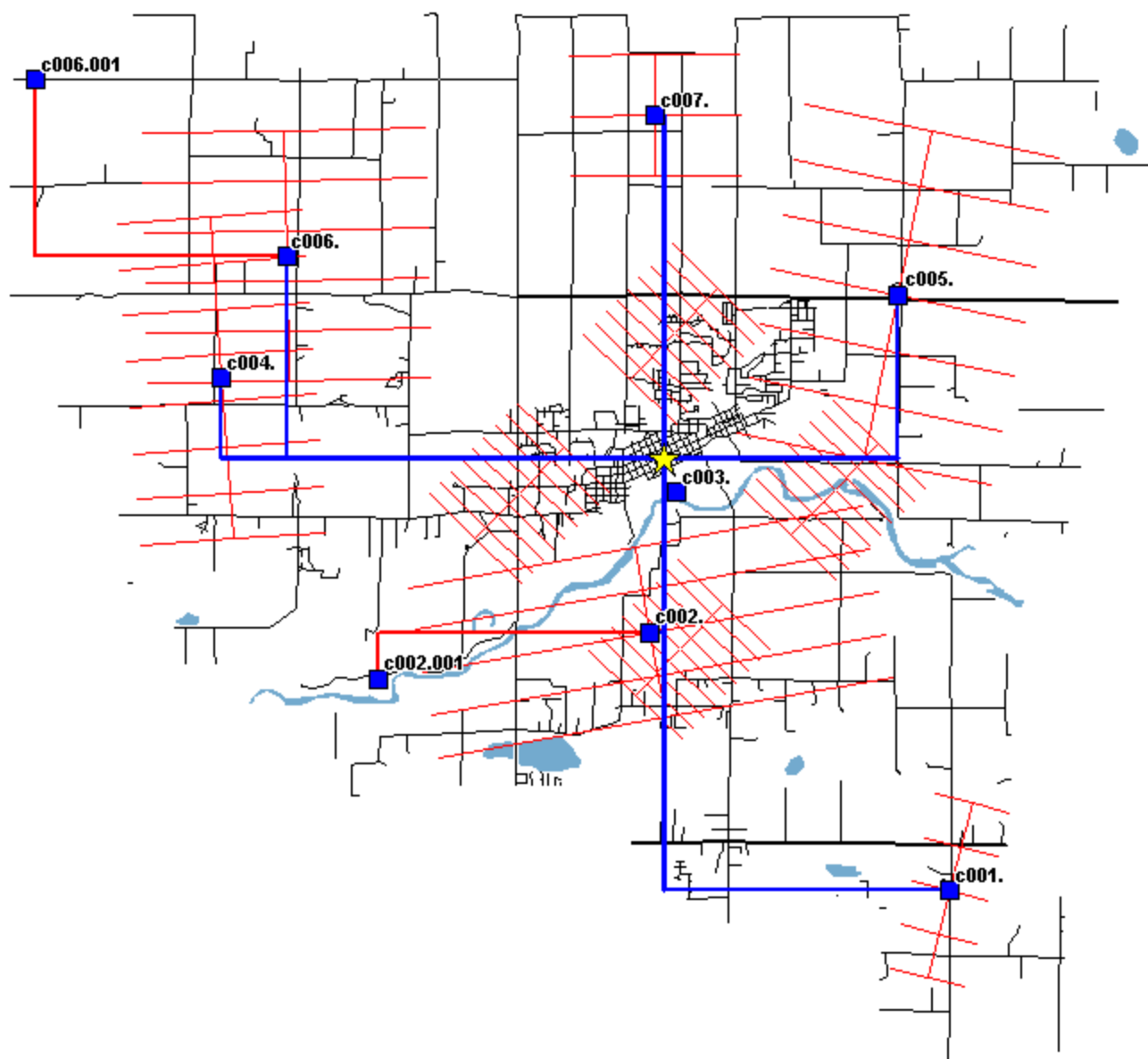
LOMSWAXA: HAI Network



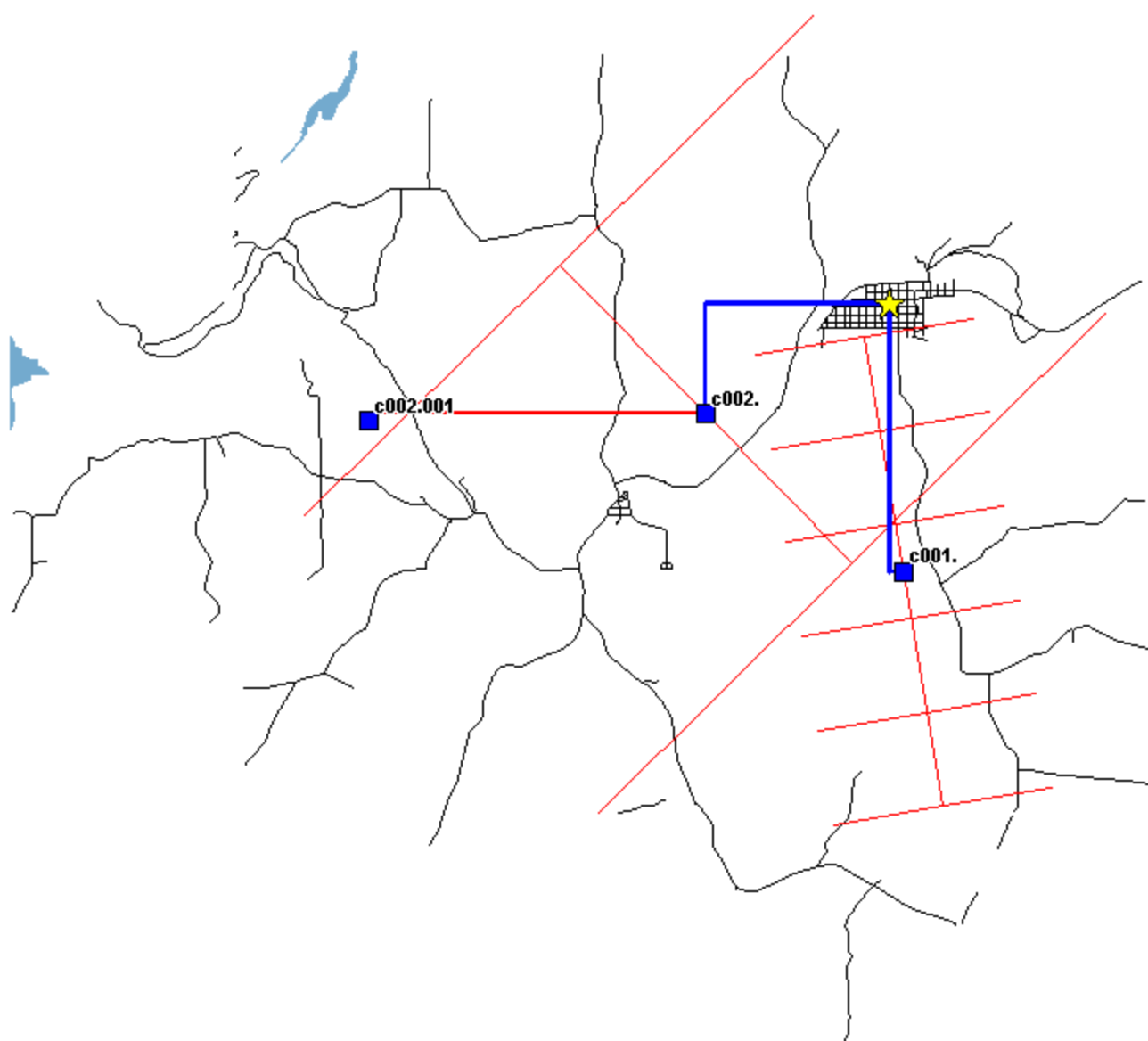
LVWOWAXX: HAI Network



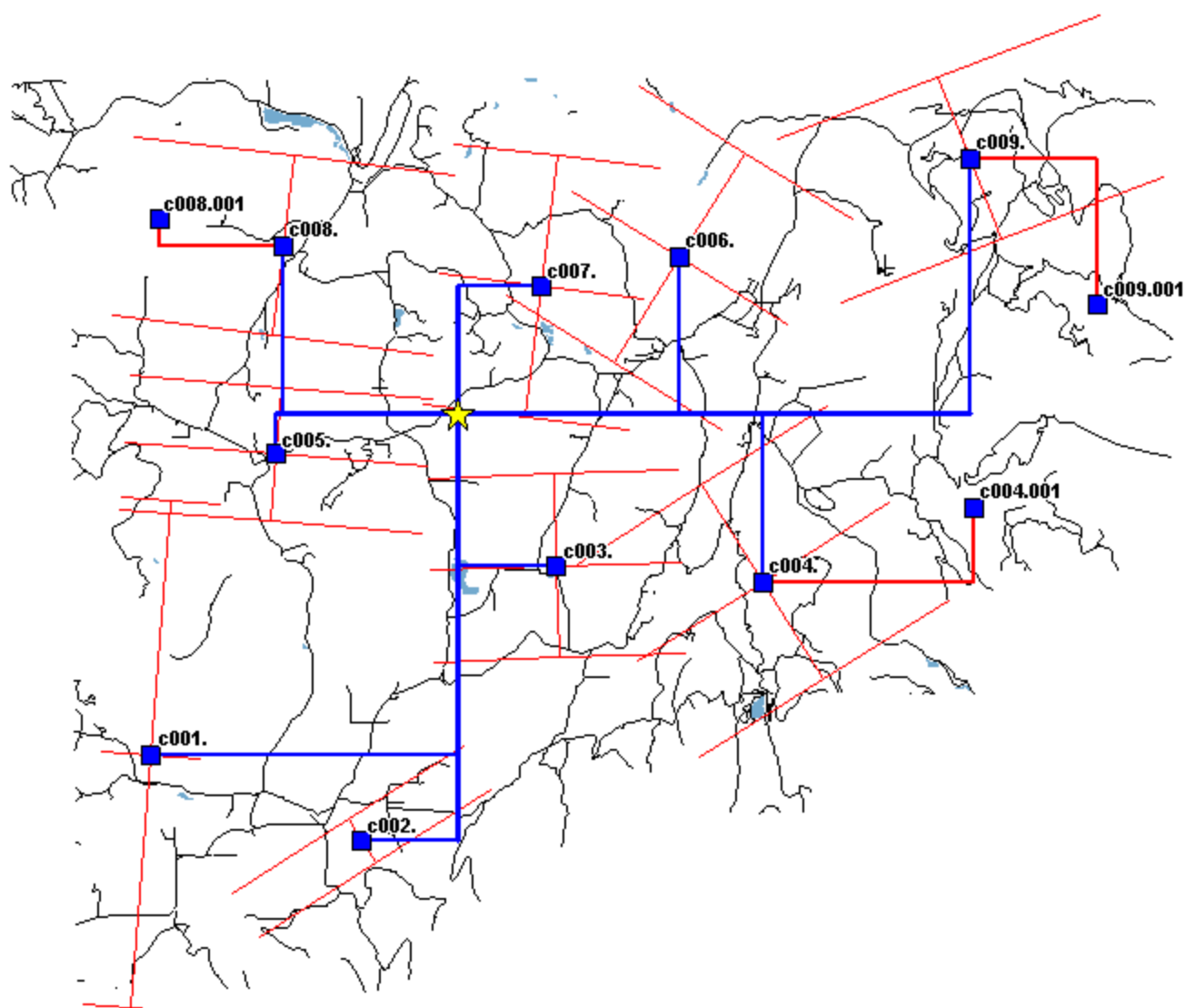
LYNDWAXX: HAI Network



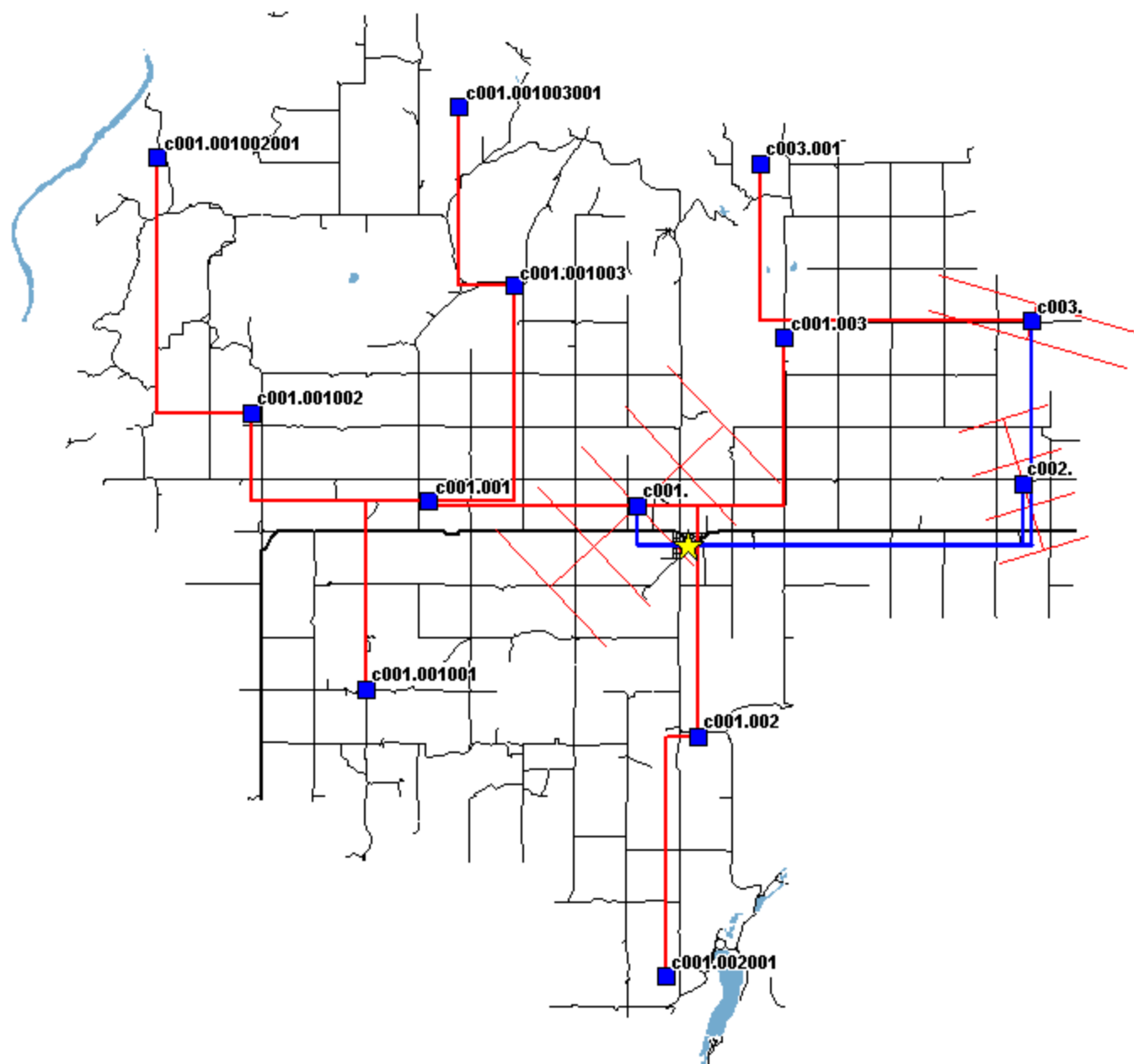
MLDNWAXA: HAI Network



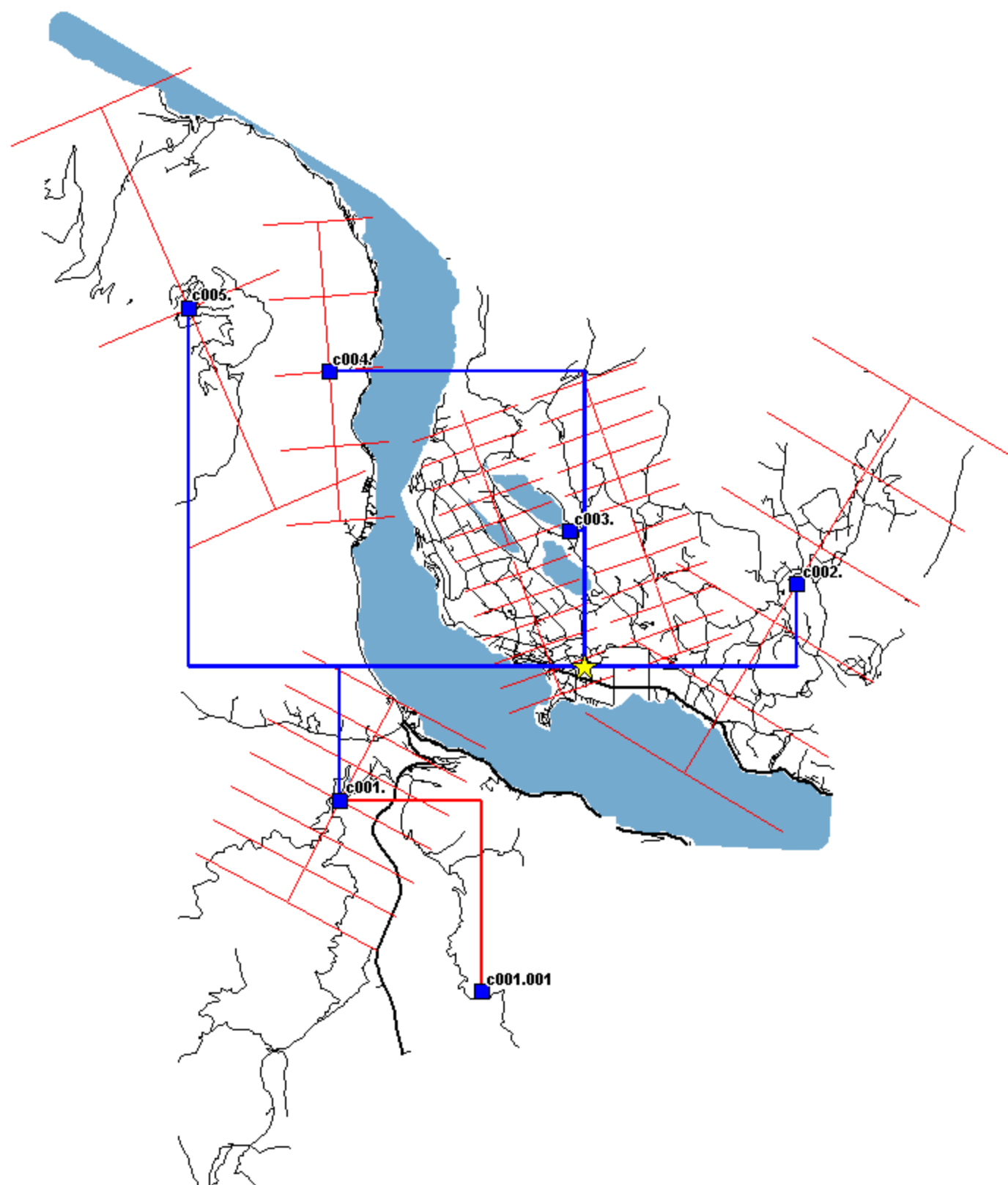
MLSNWAXA: HAI Network



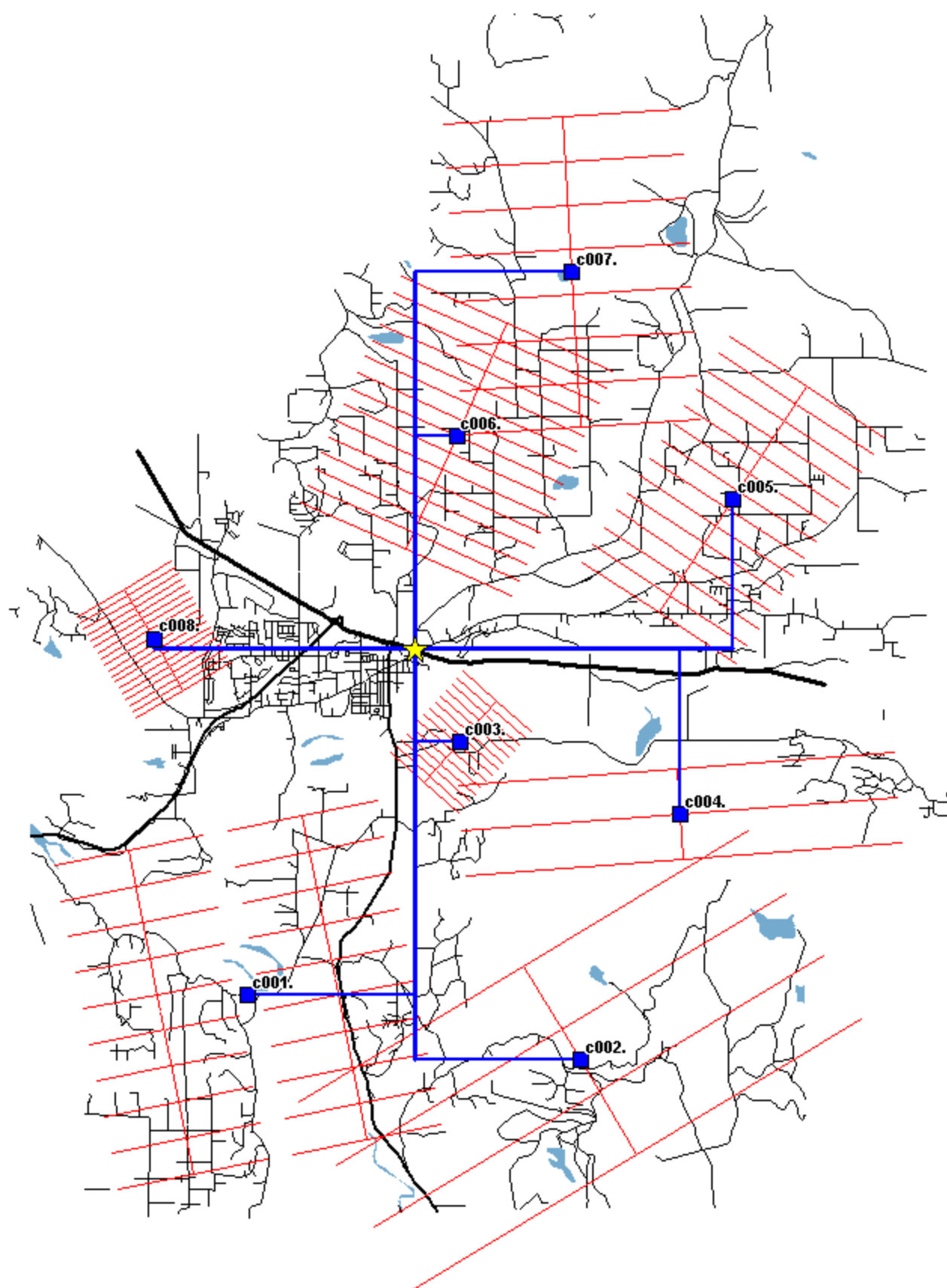
MNFDWAXX: HAI Network



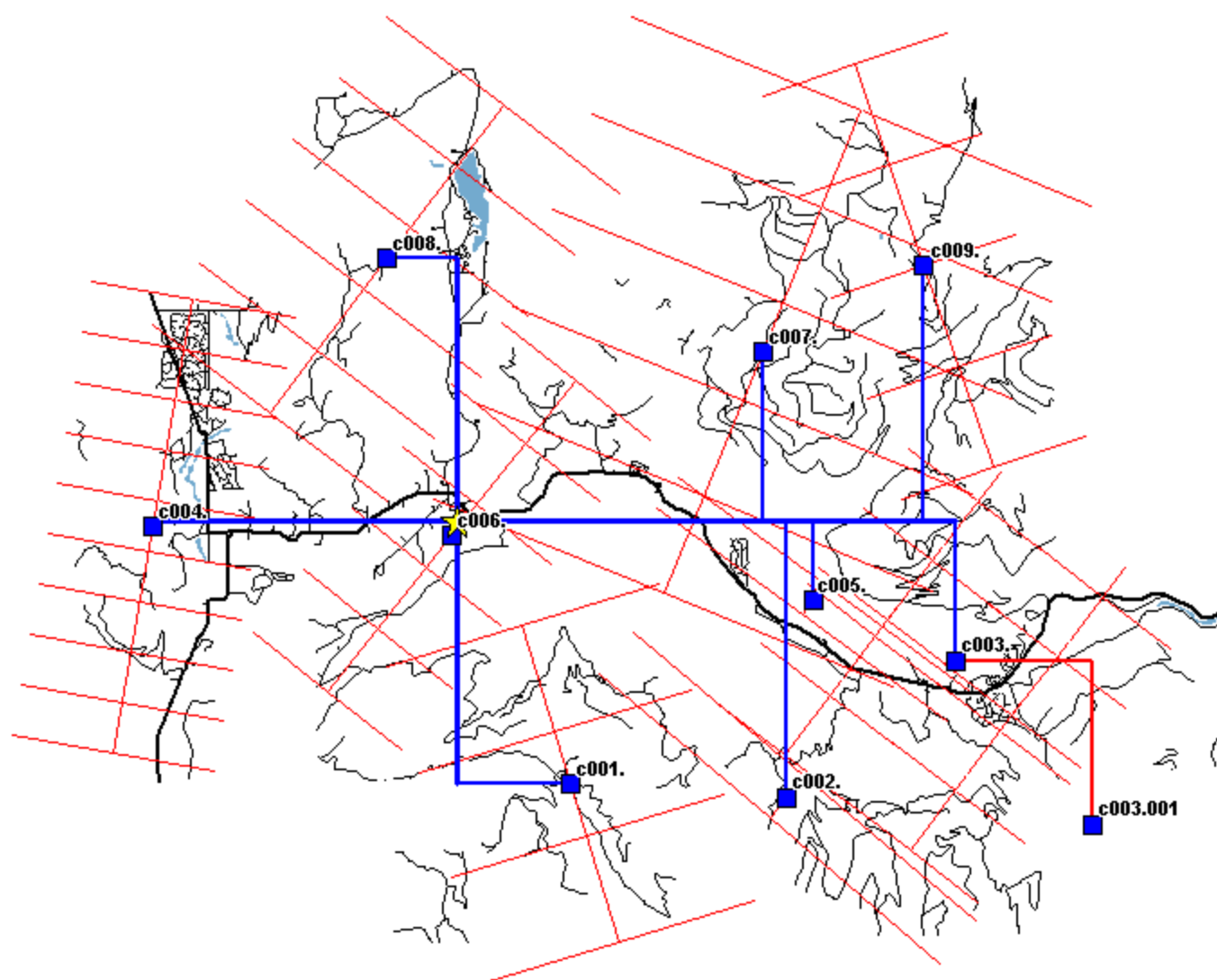
MNSNWAXA: HAI Network



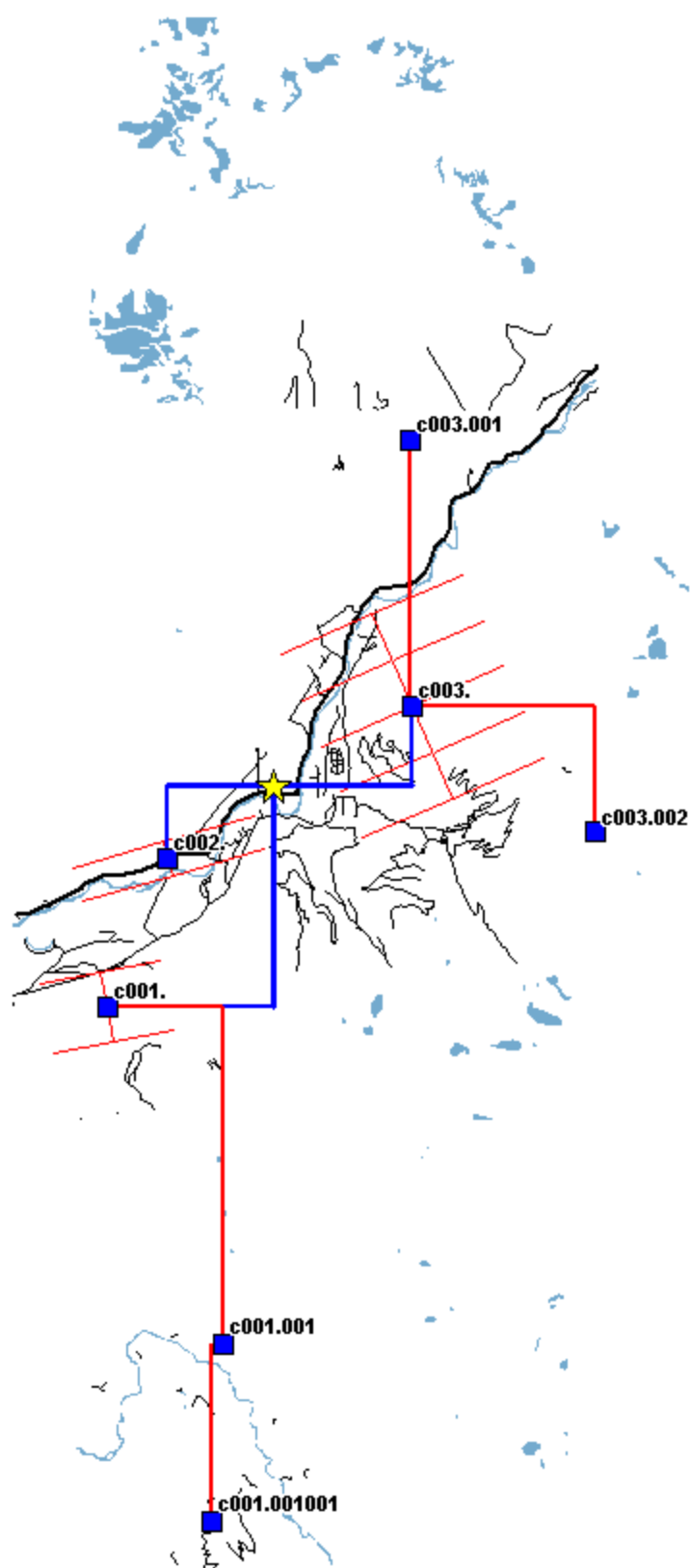
MONRWAXX: HAI Network



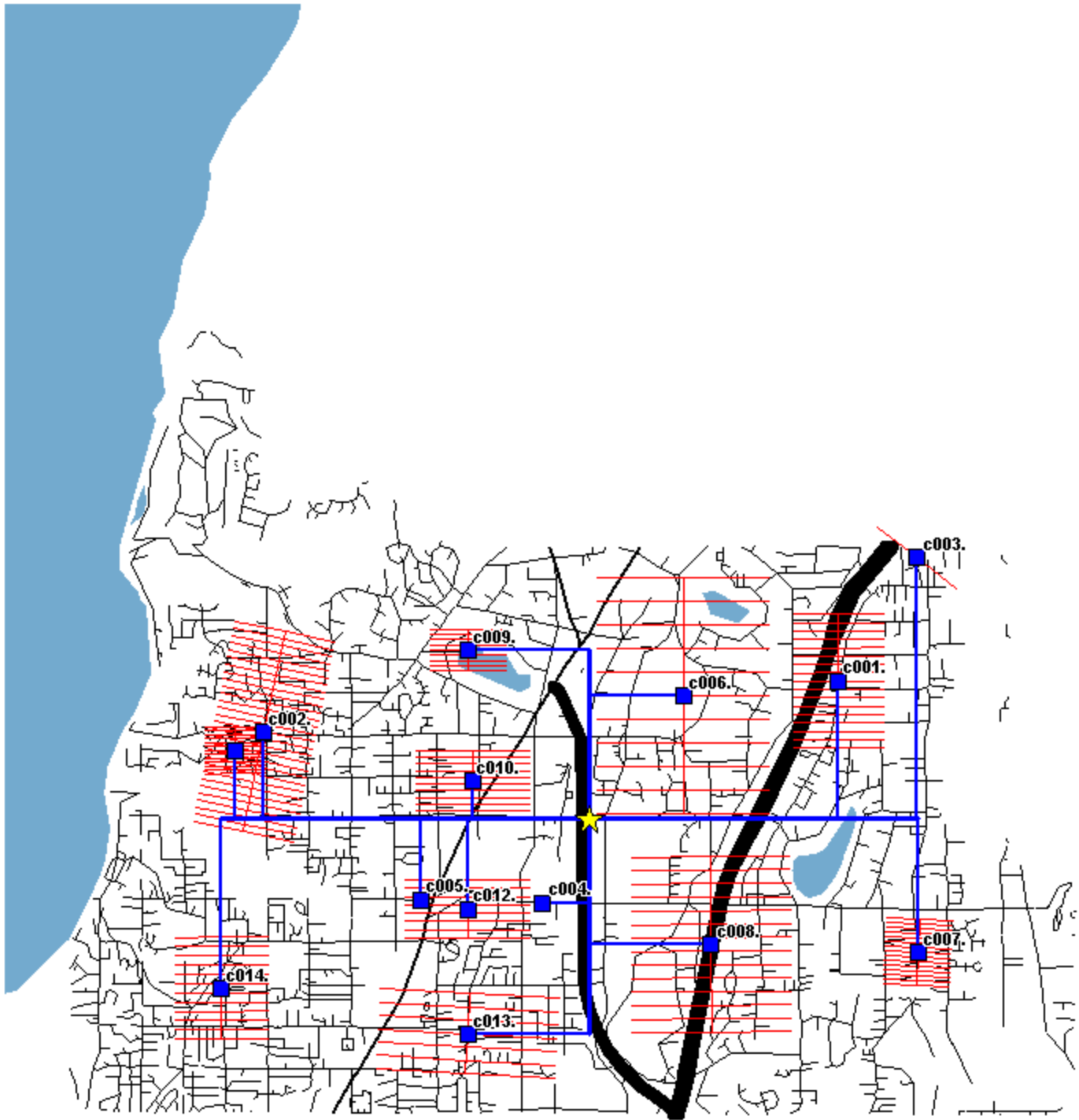
MPFLWAXA: HAI Network



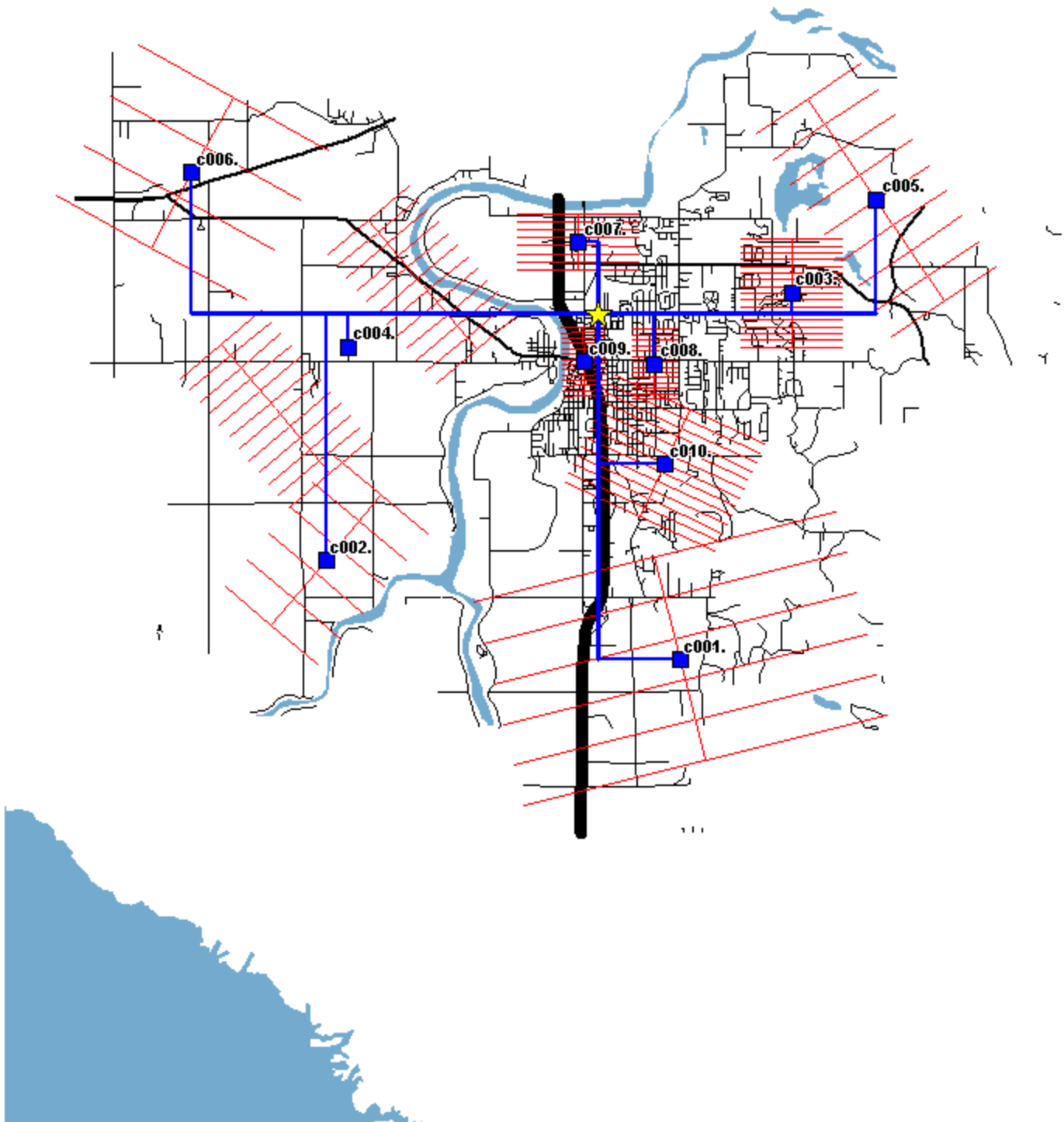
MRBLWAXX: HAI Network



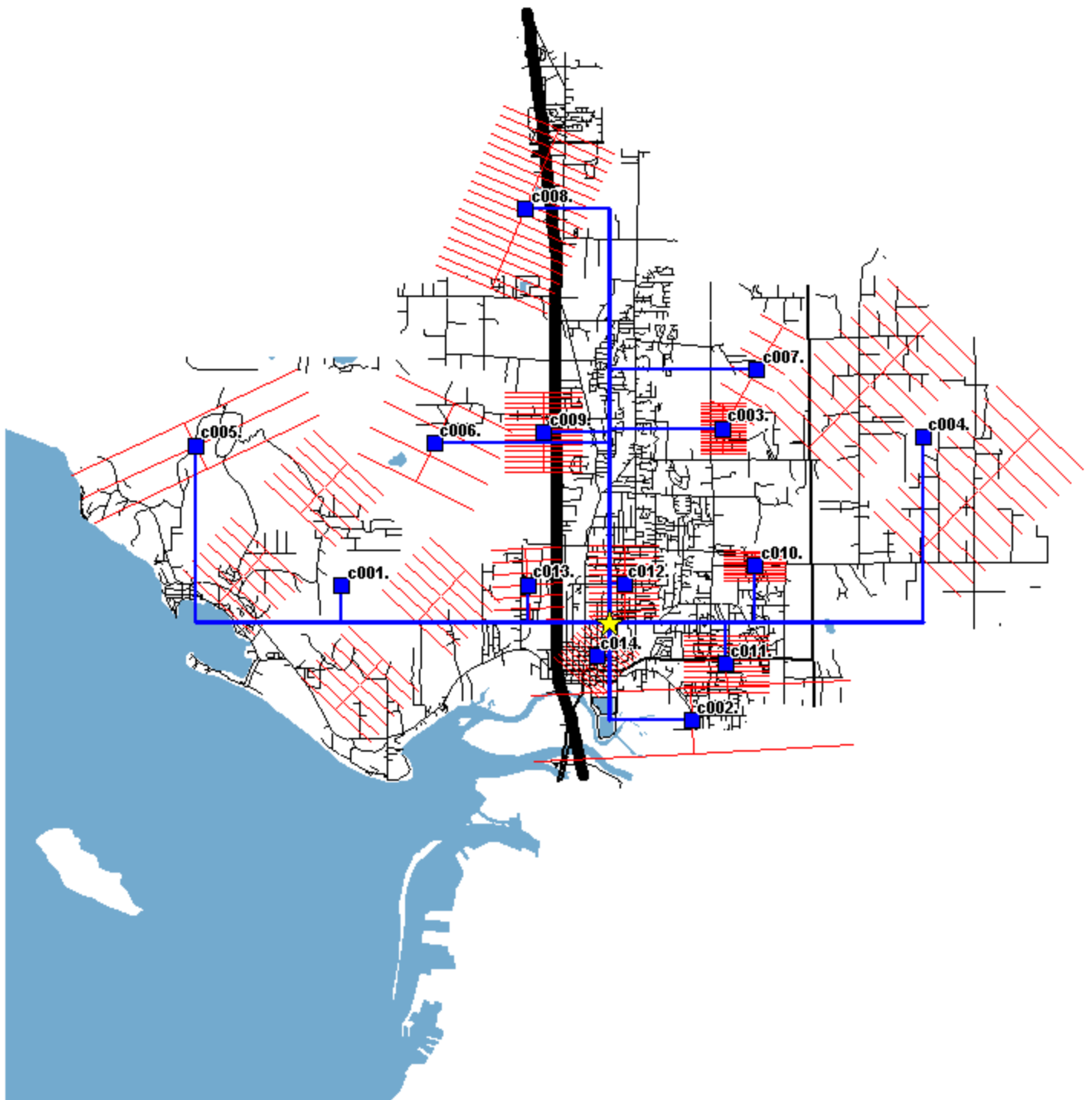
MRWYWAXA: HAI Network



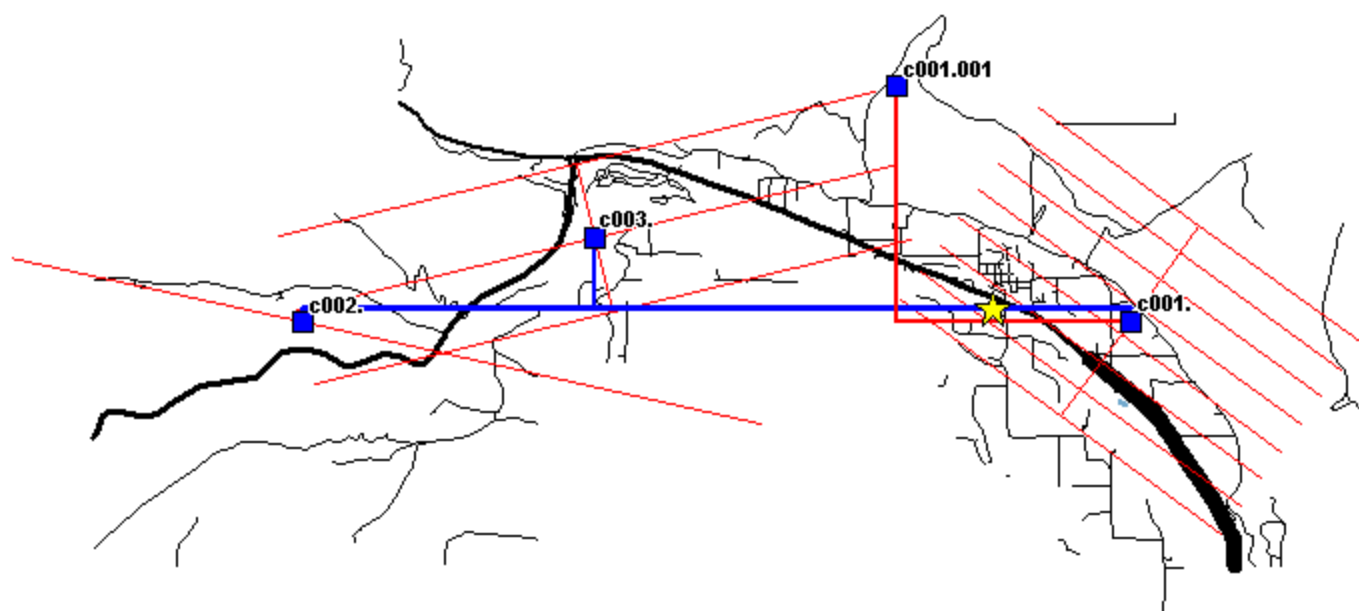
MTVRWAXX: HAI Network



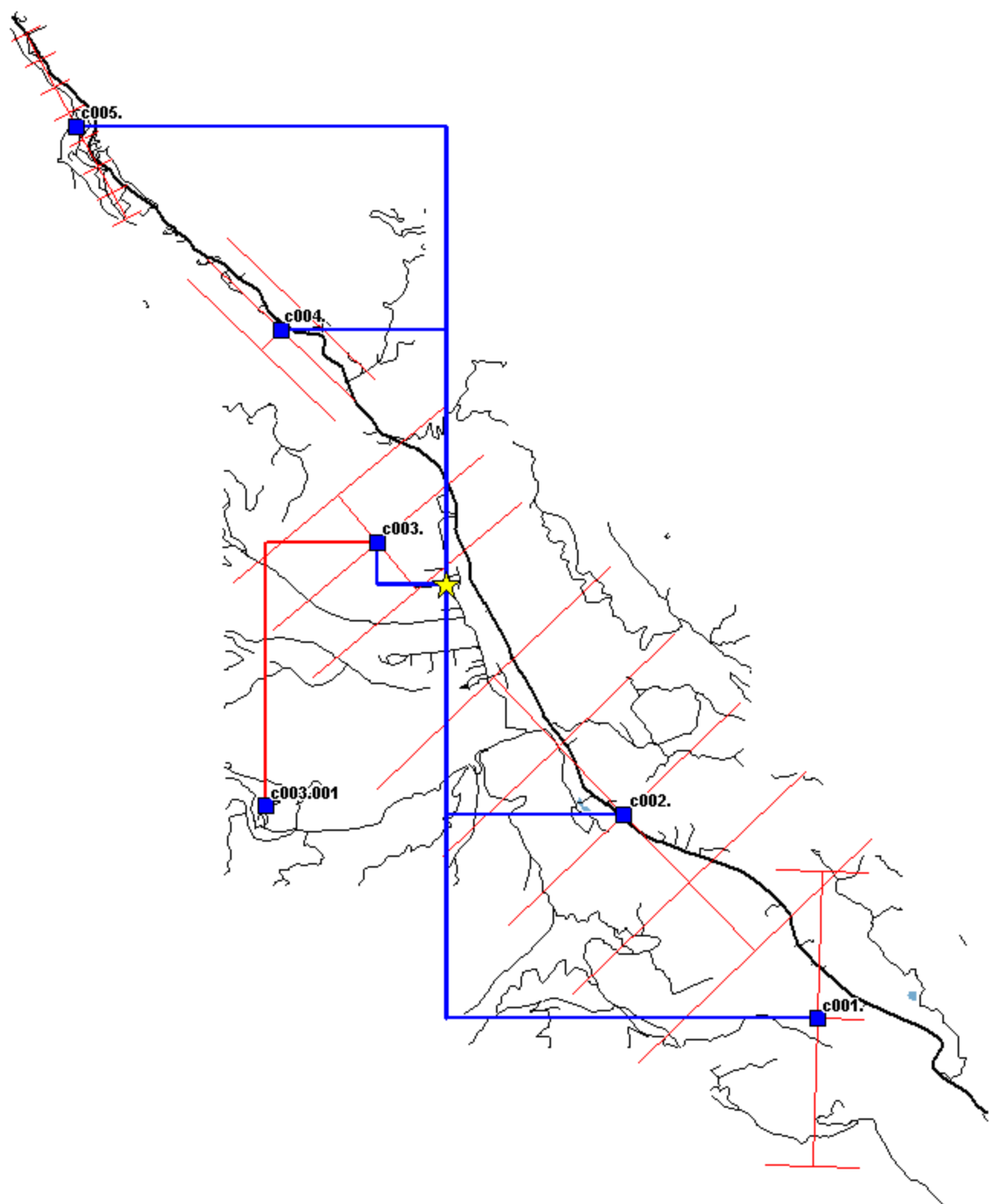
MYVIWAXX: HAI Network



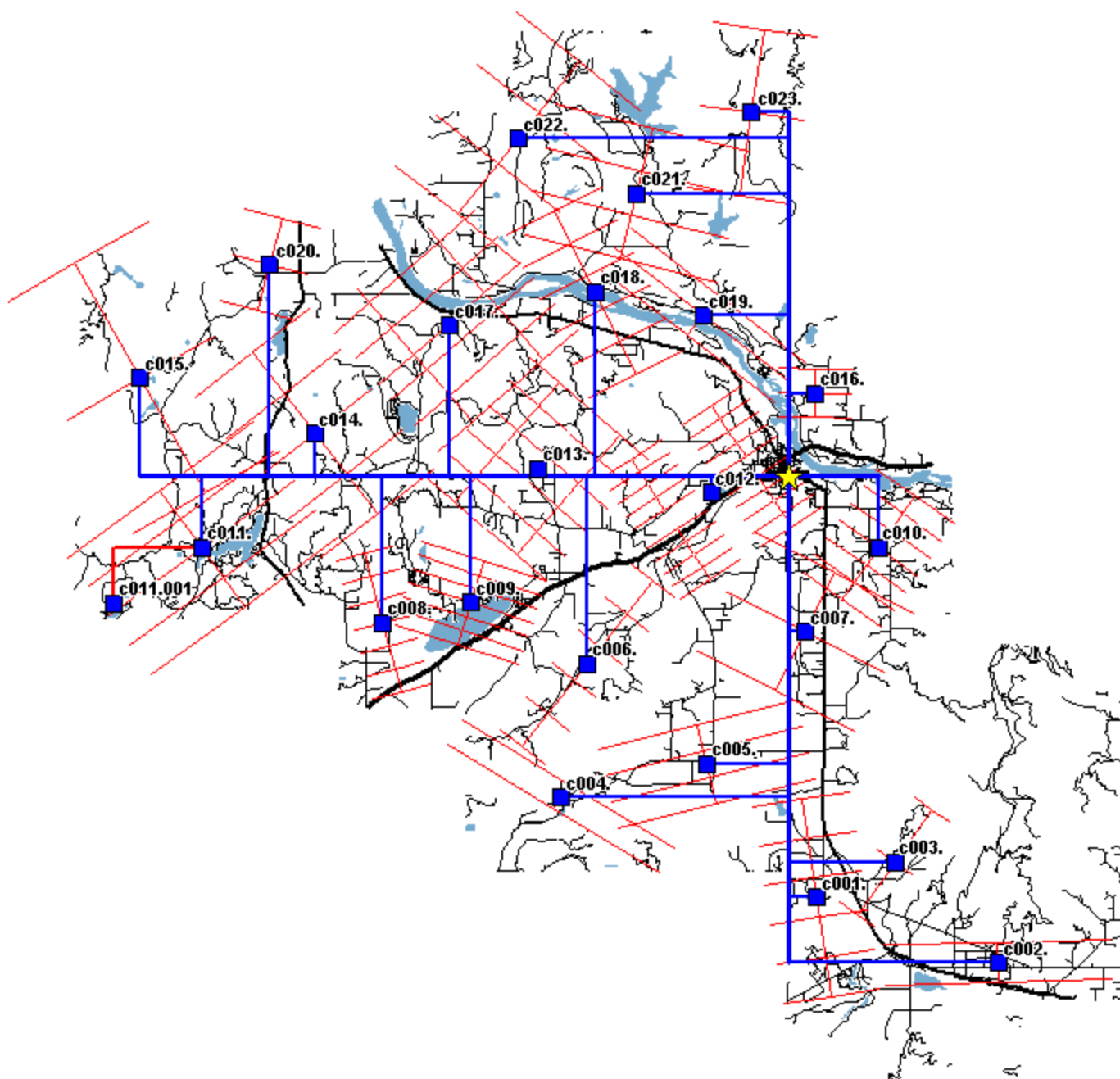
NCHSWAXX: HAI Network



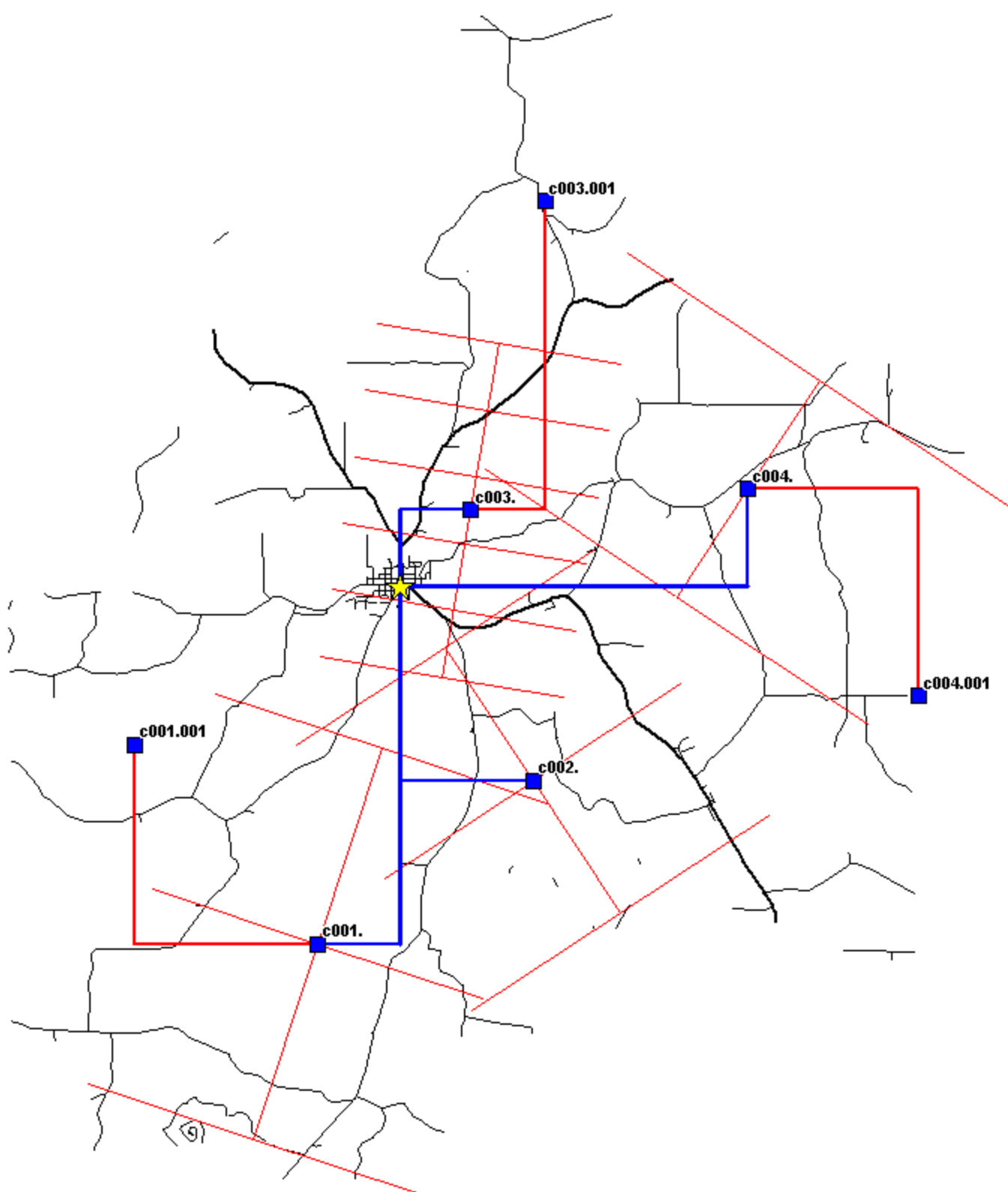
NILEWAXX: HAI Network

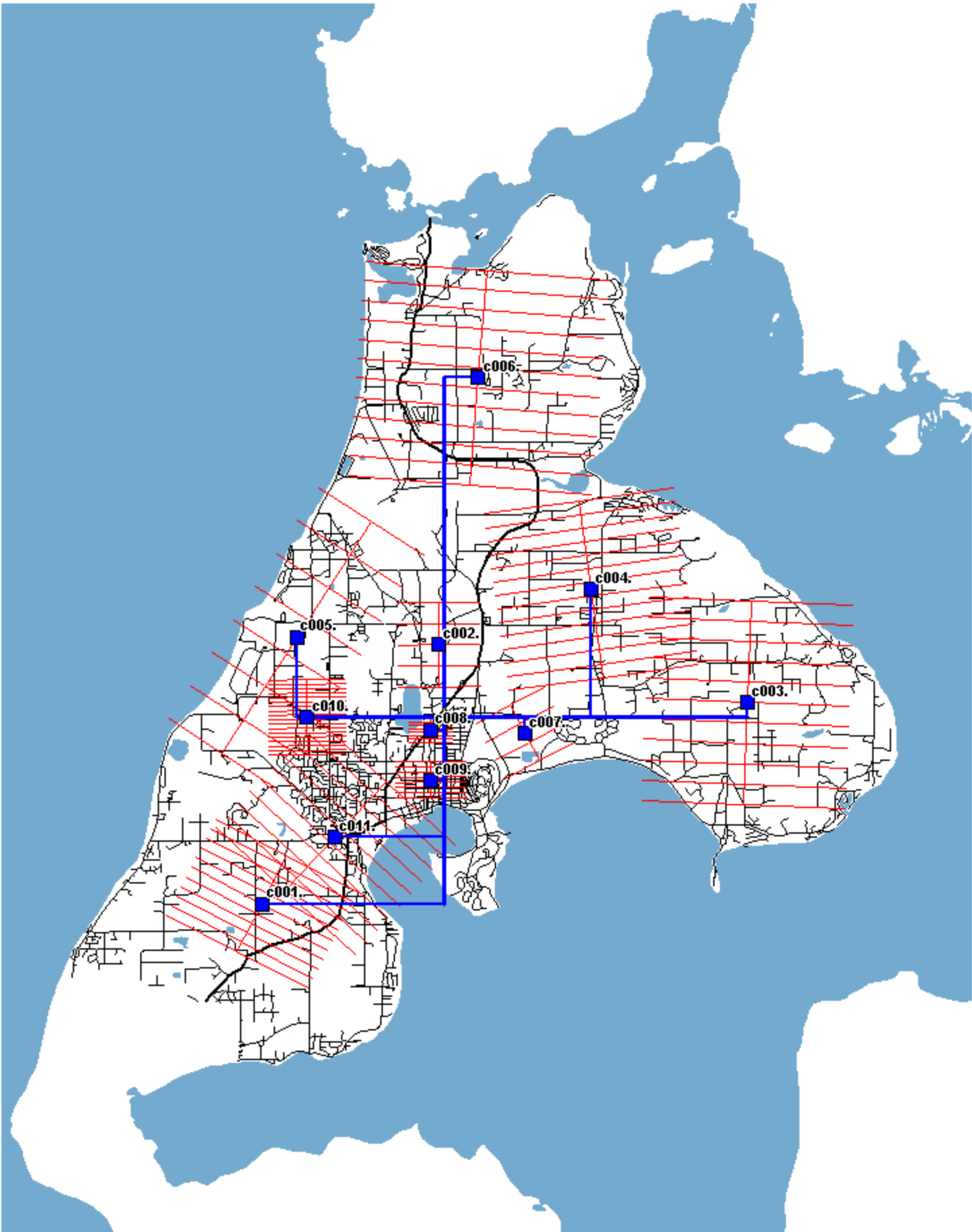


NWPTWAXX: HAI Network

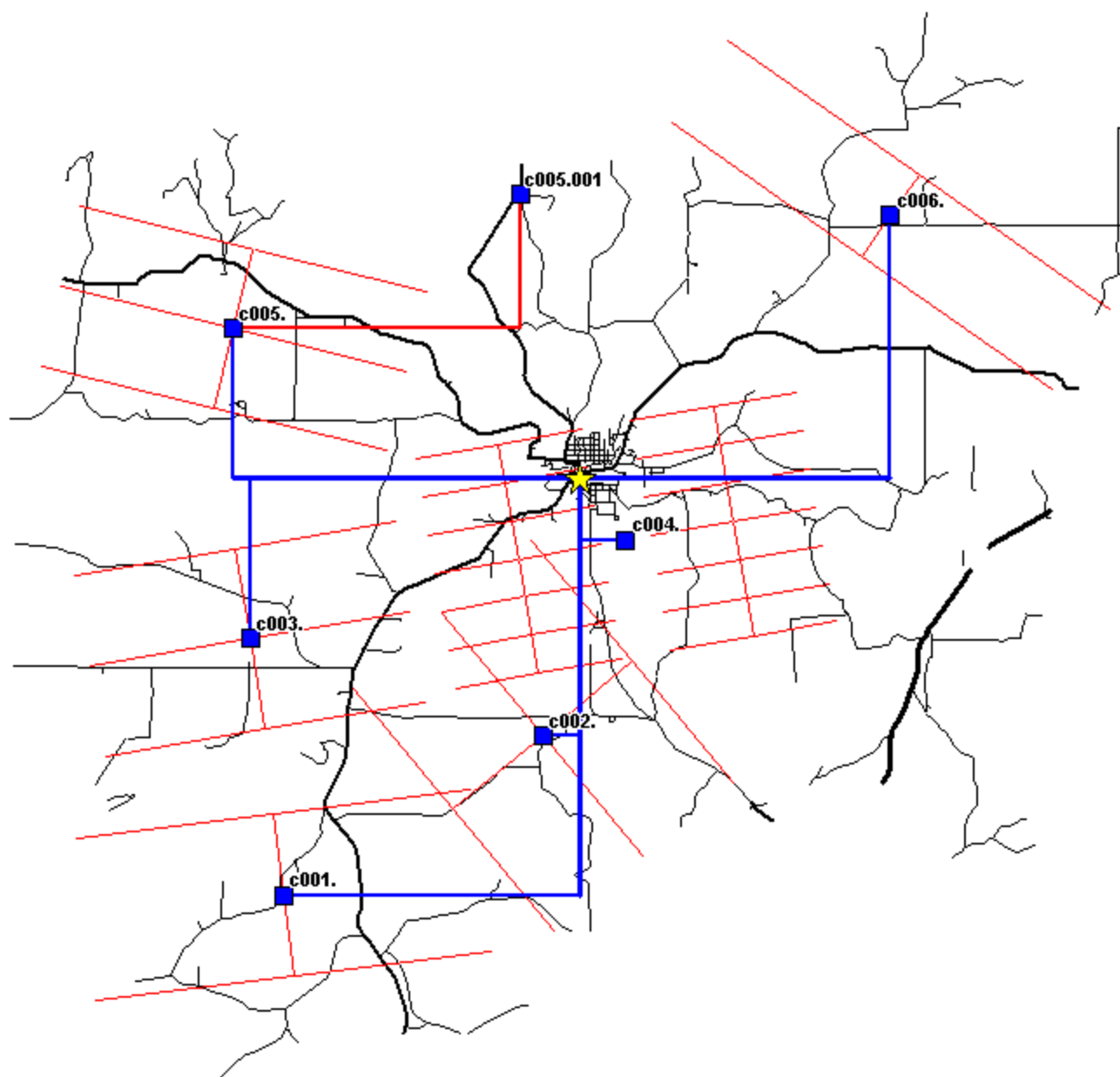


OKDLWAXX: HAI Network

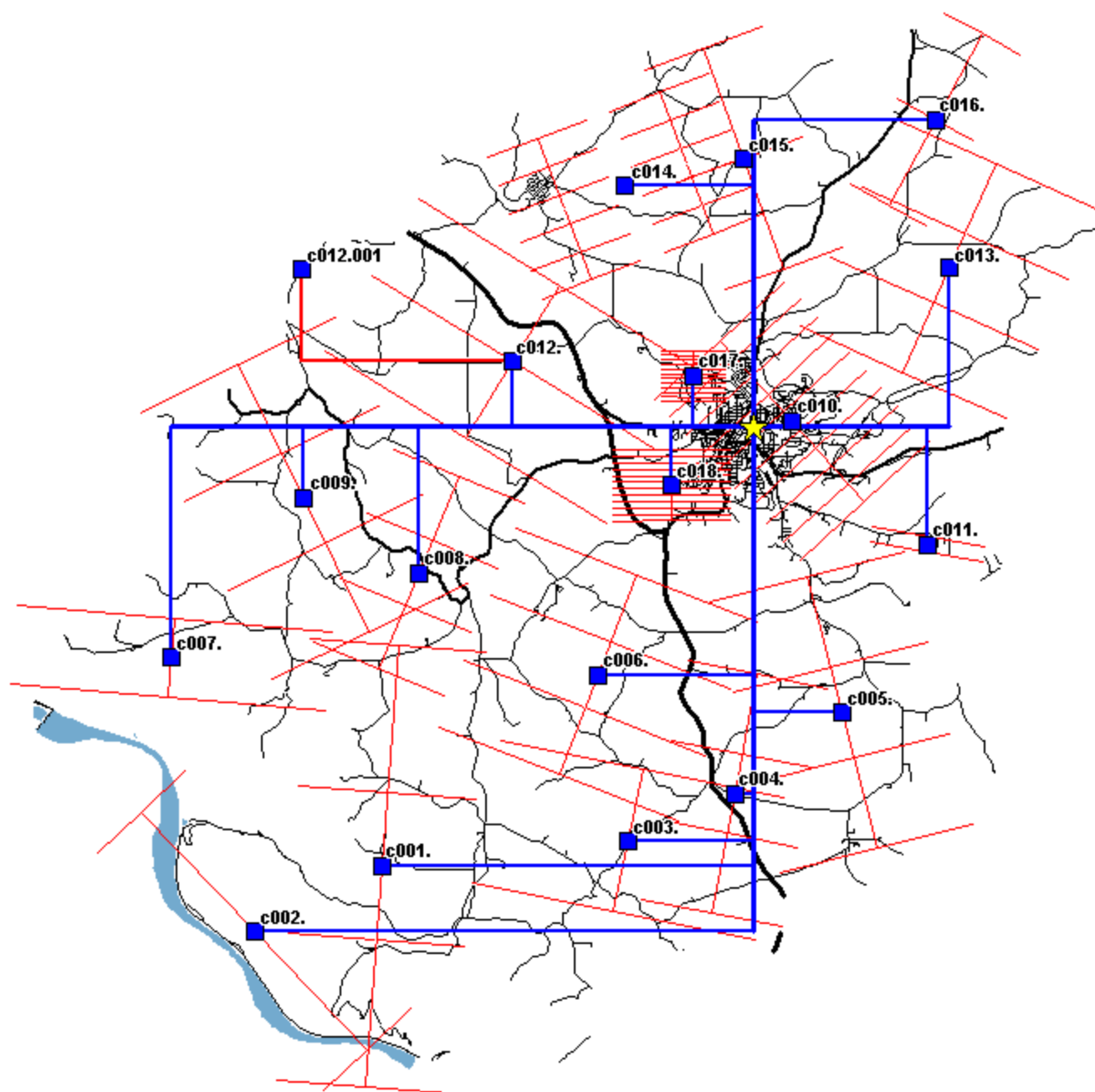




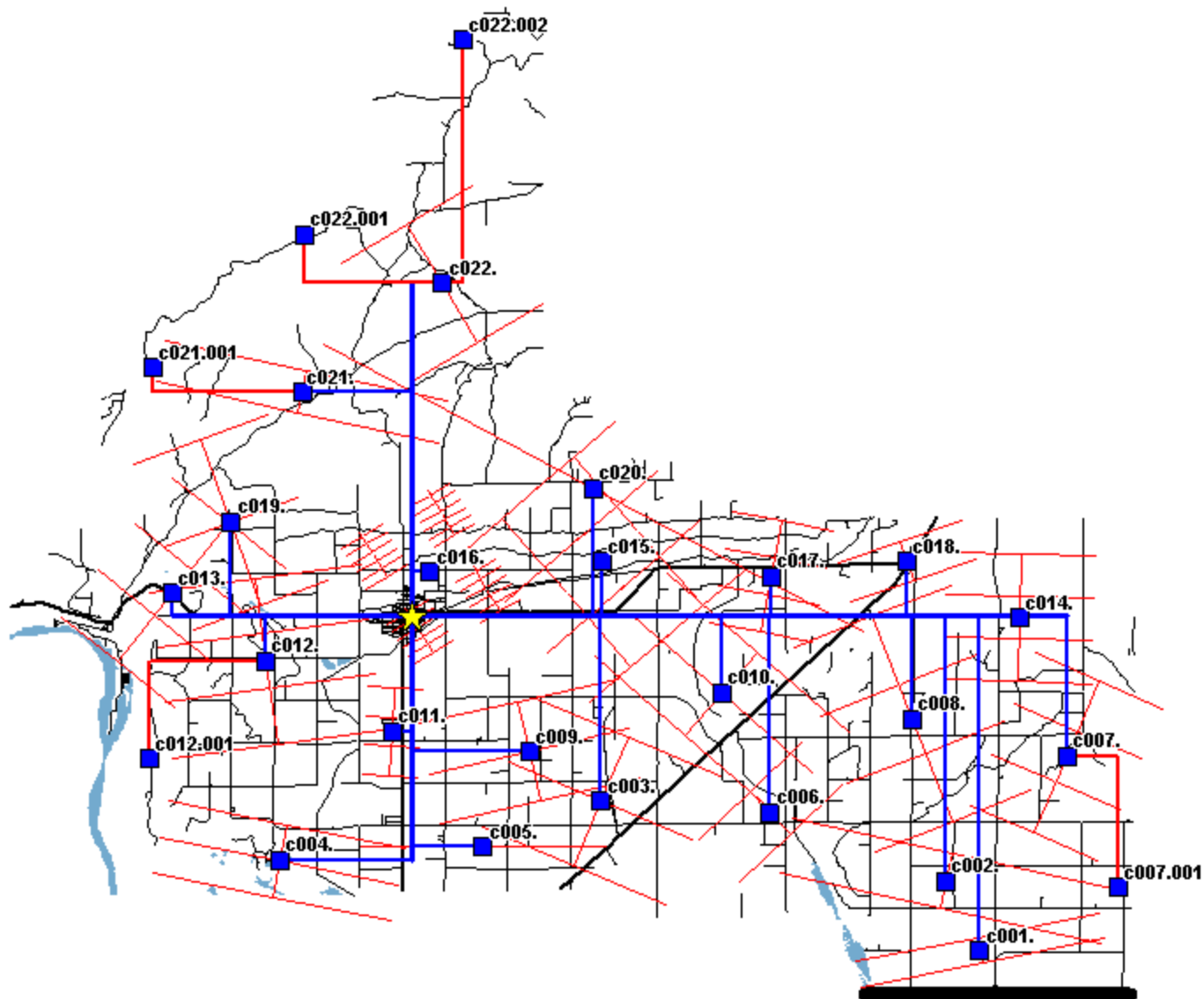
PALSWWAXX: HAI Network



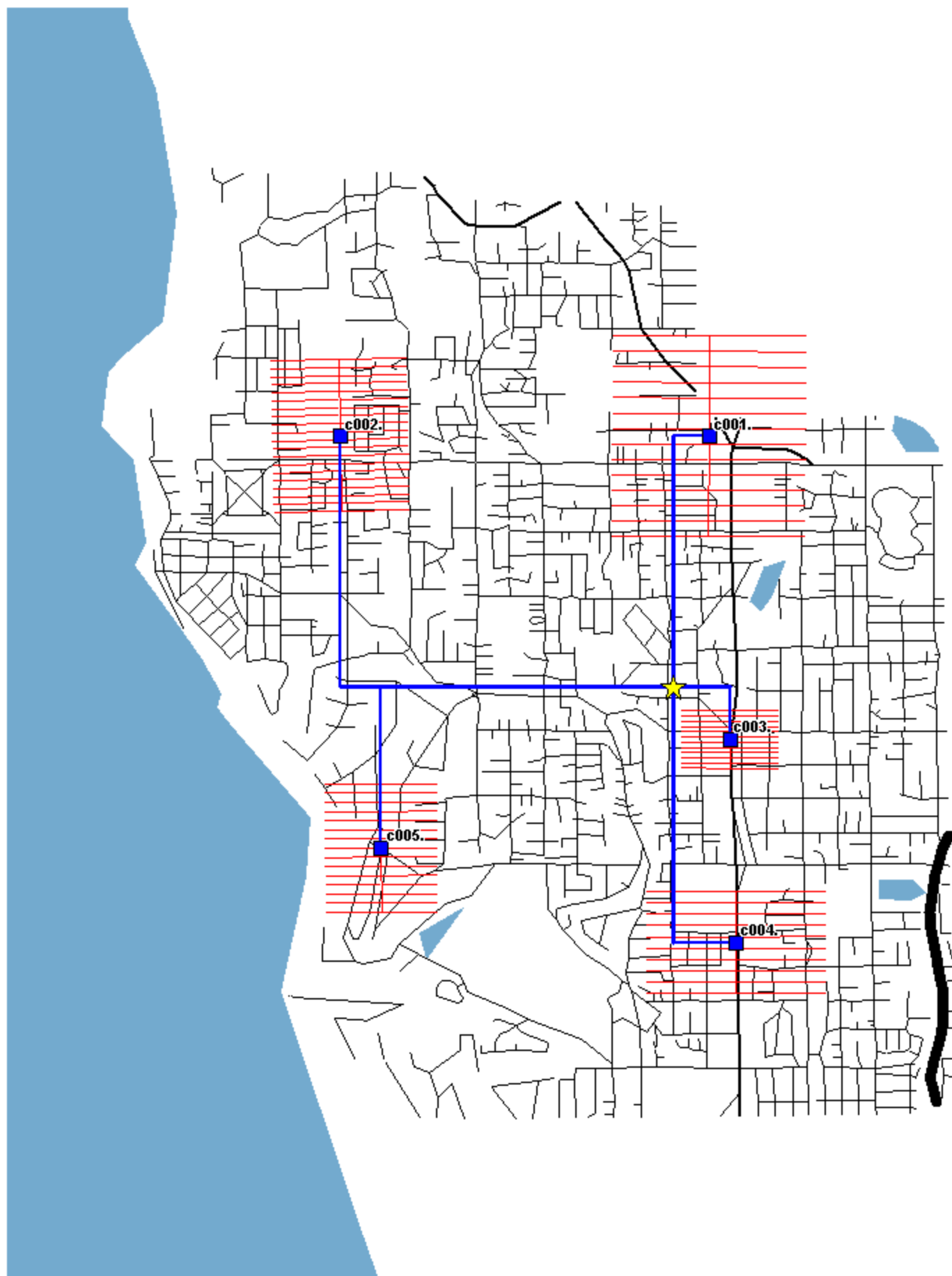
PLMNWAXX: HAI Network



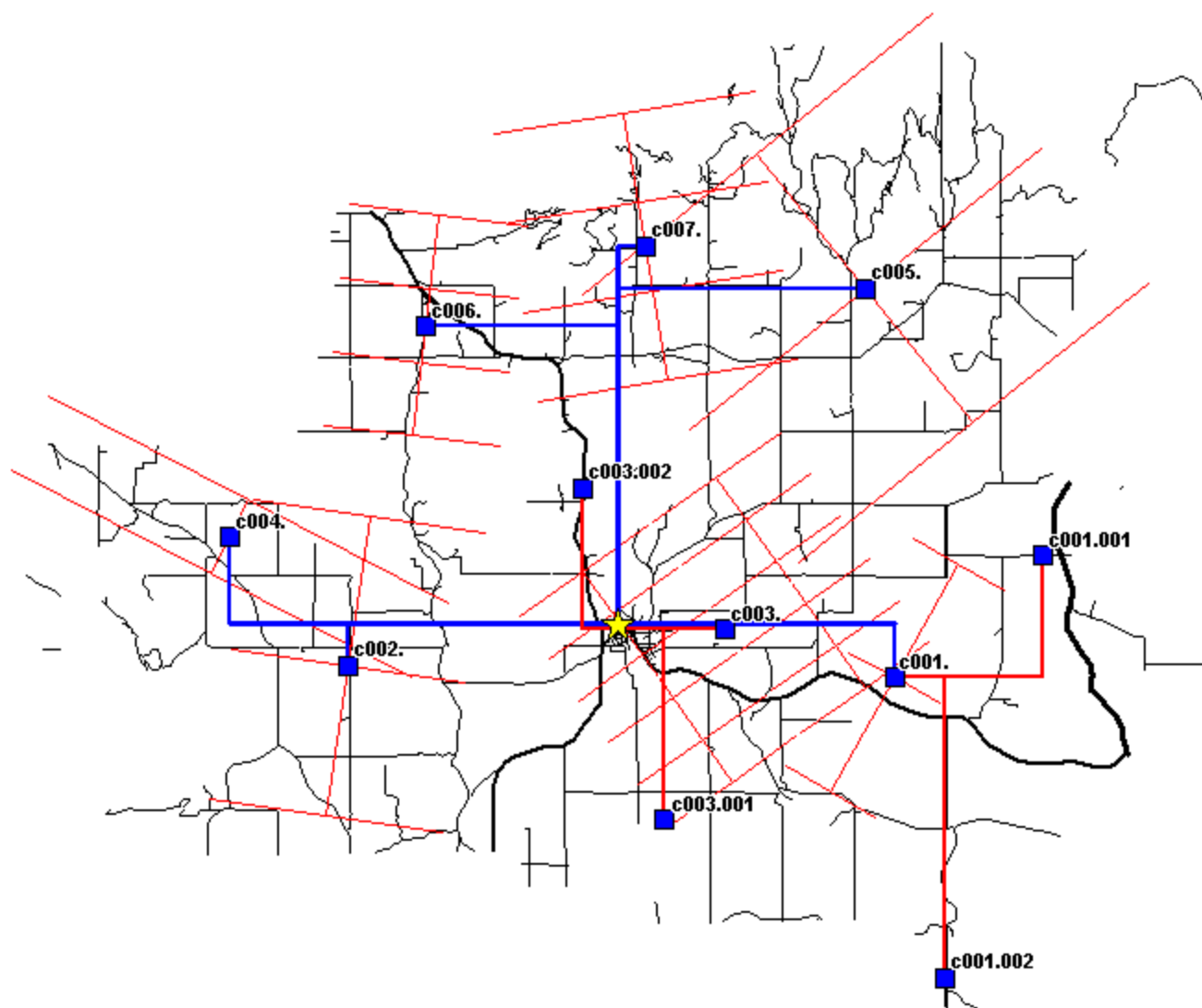
QNCYWAXX: HAI Network



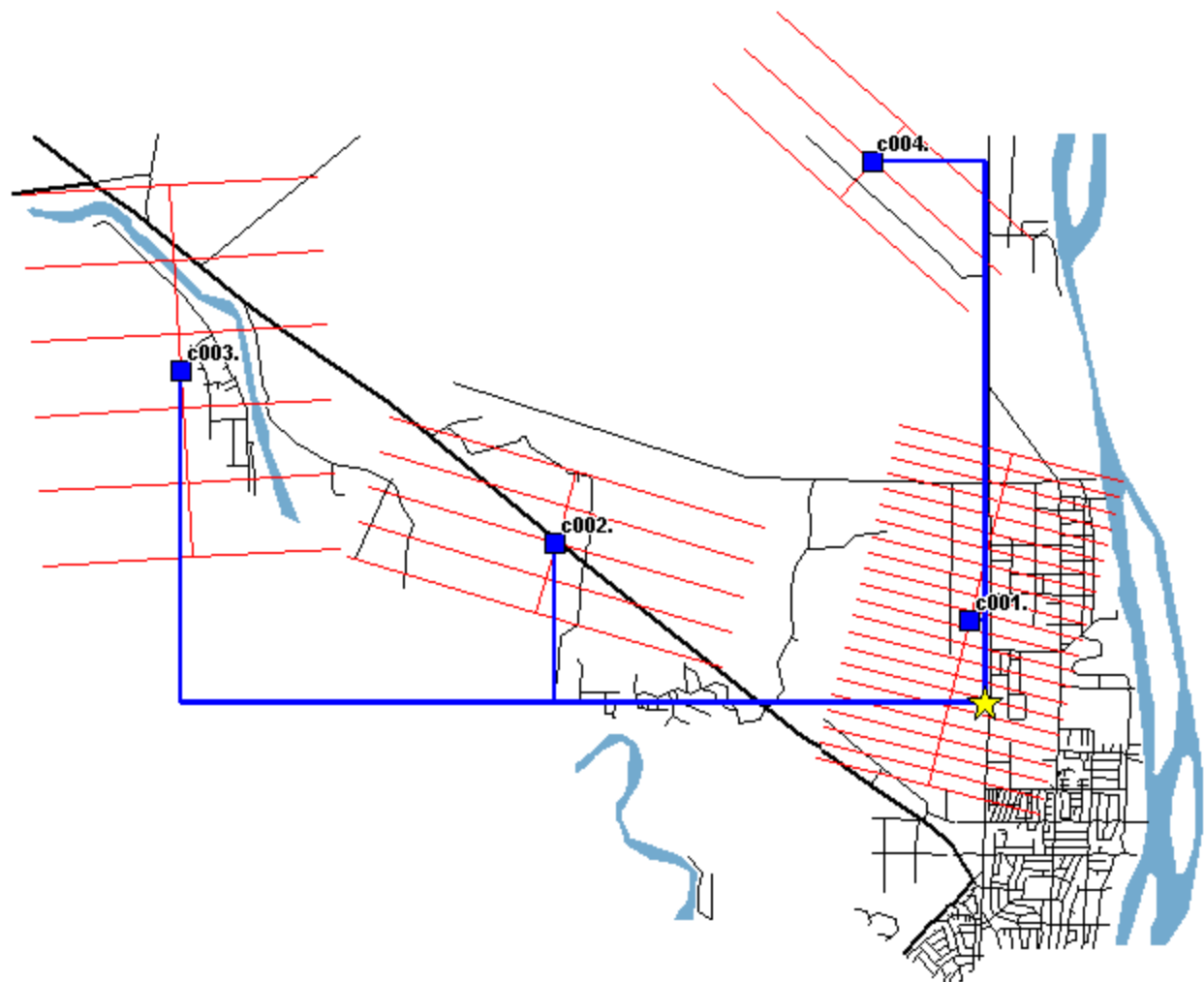
RCBHWAXX: HAI Network



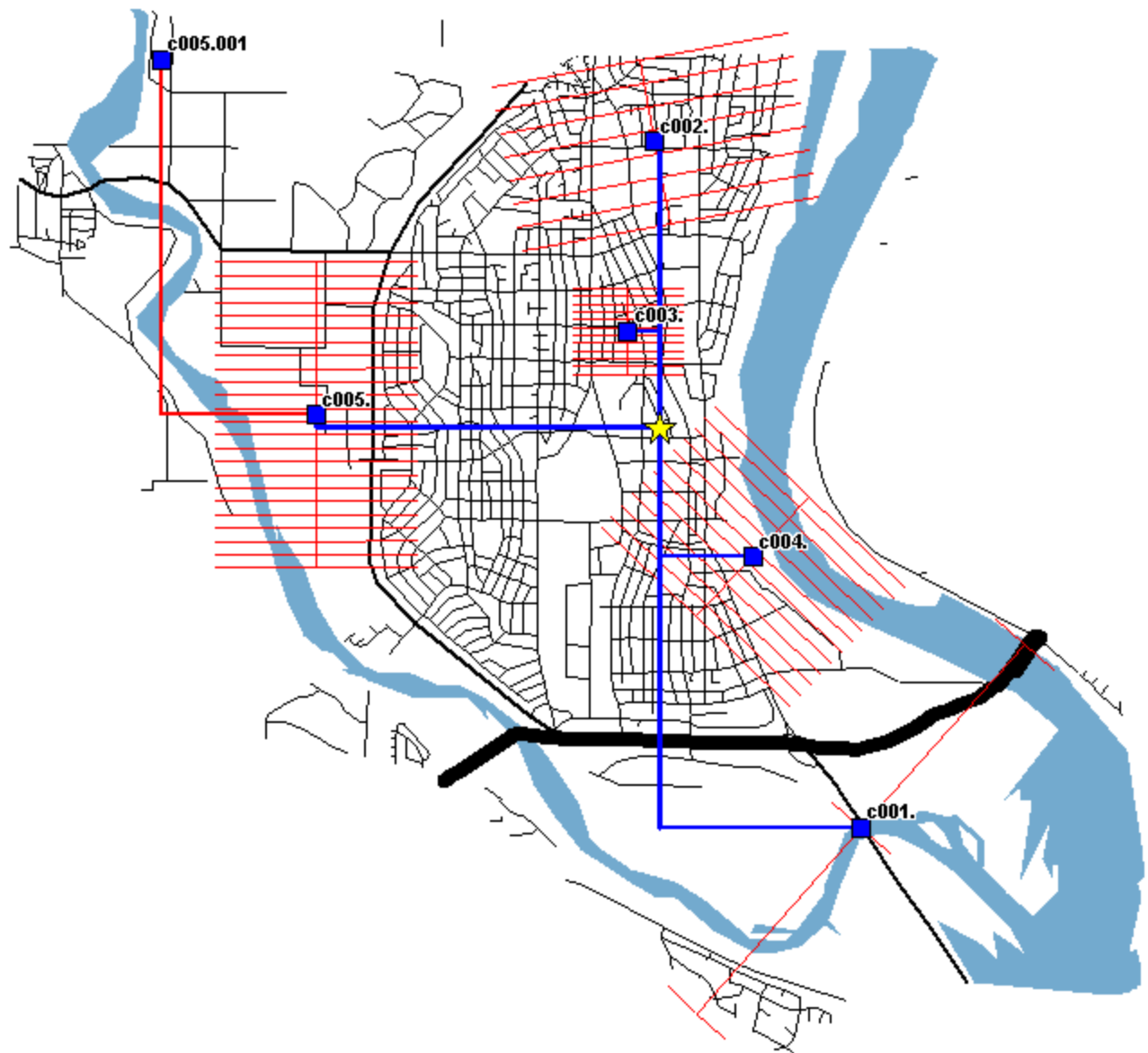
RCFRWAXB: HAI Network



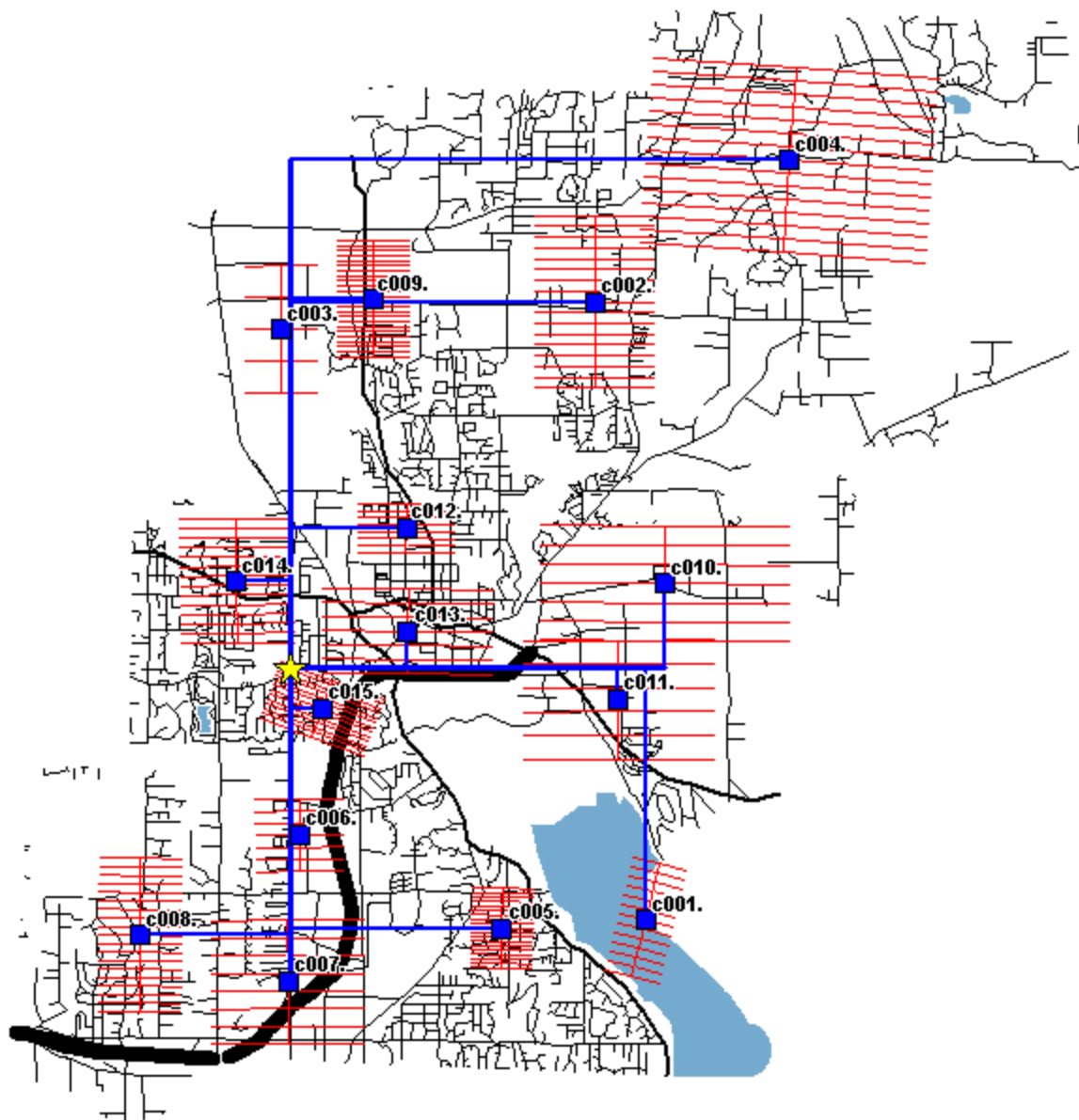
RCLDWAXA: HAI Network



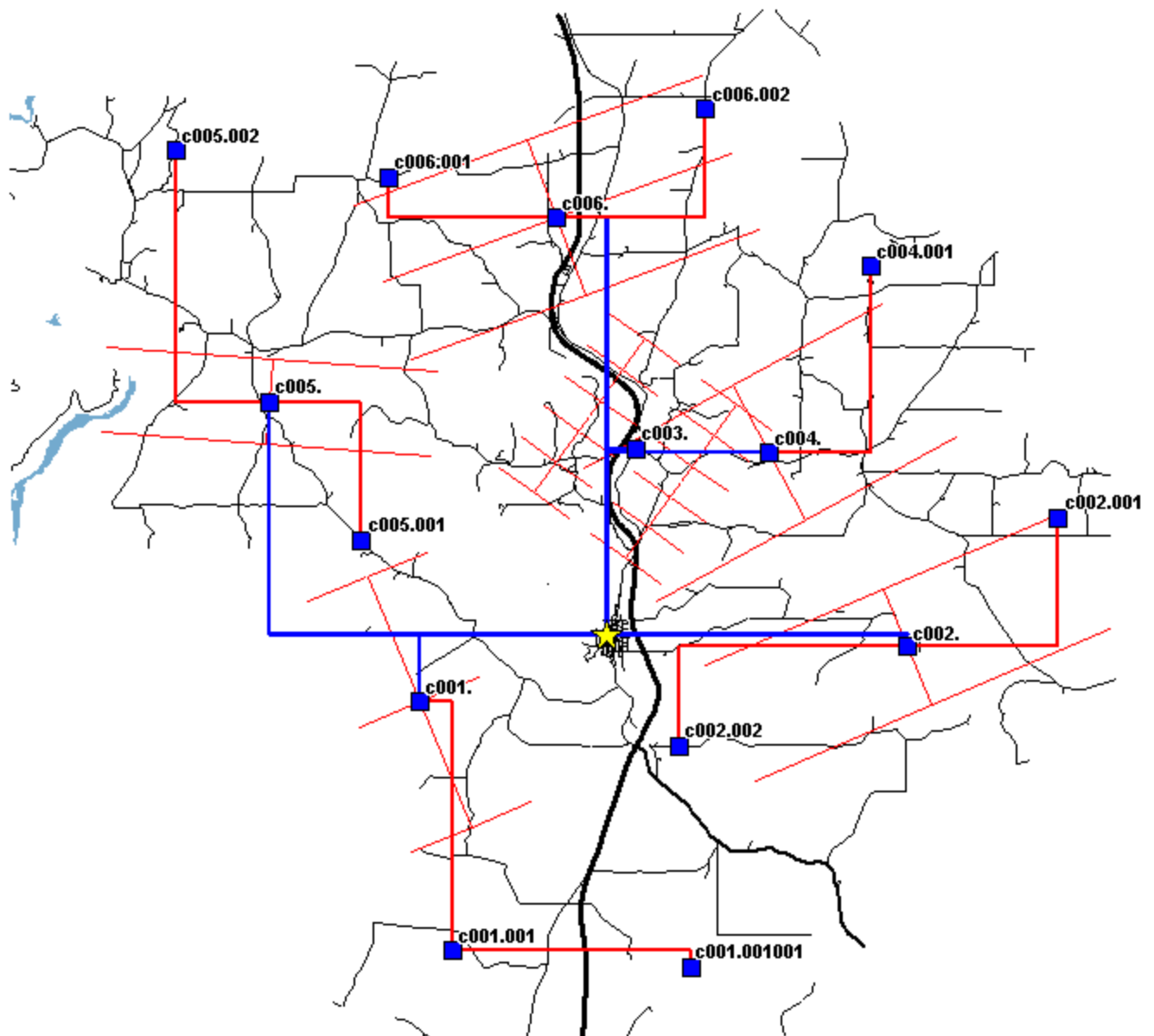
RCLDWAXB: HAI Network



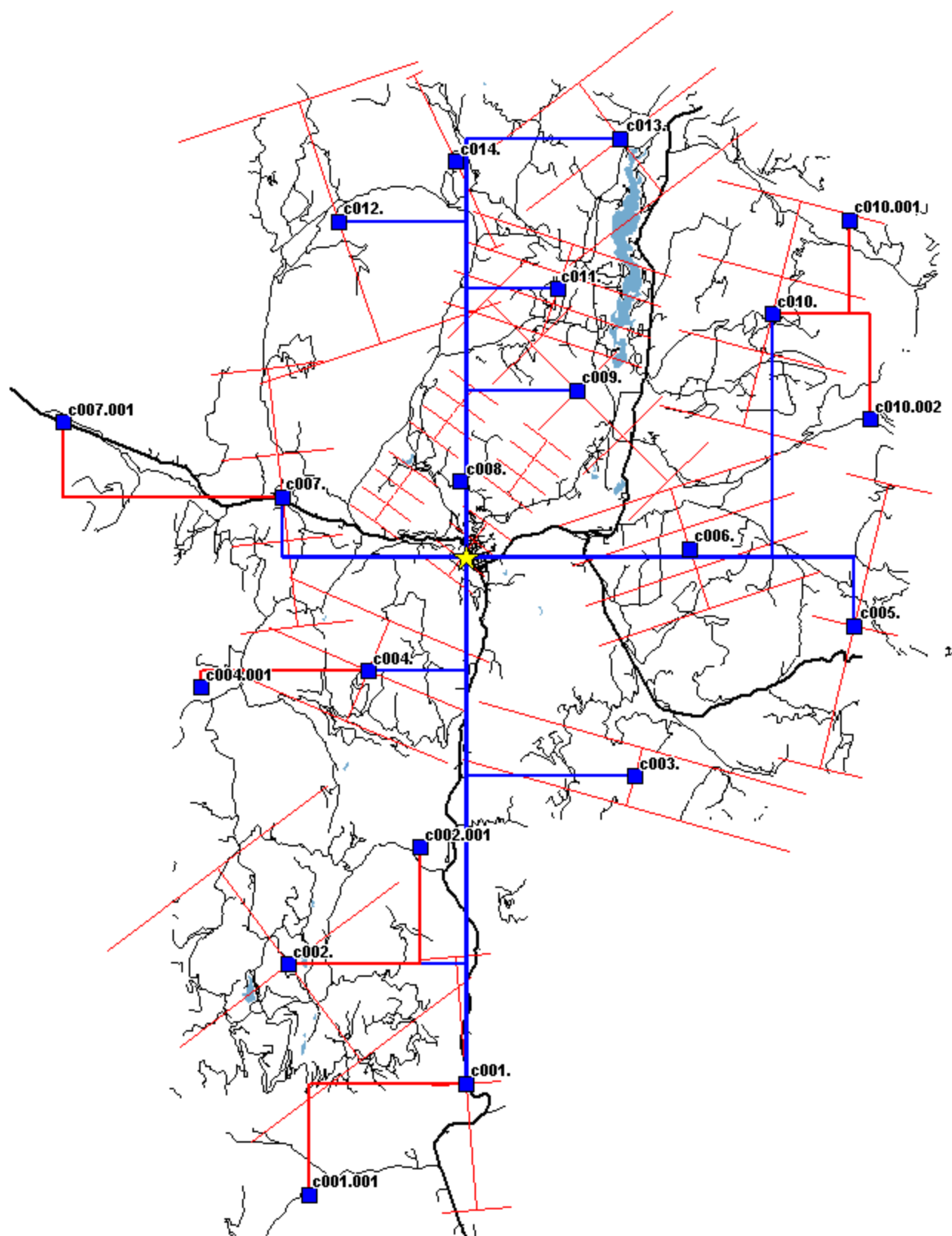
RDMDWAXA: HAI Network



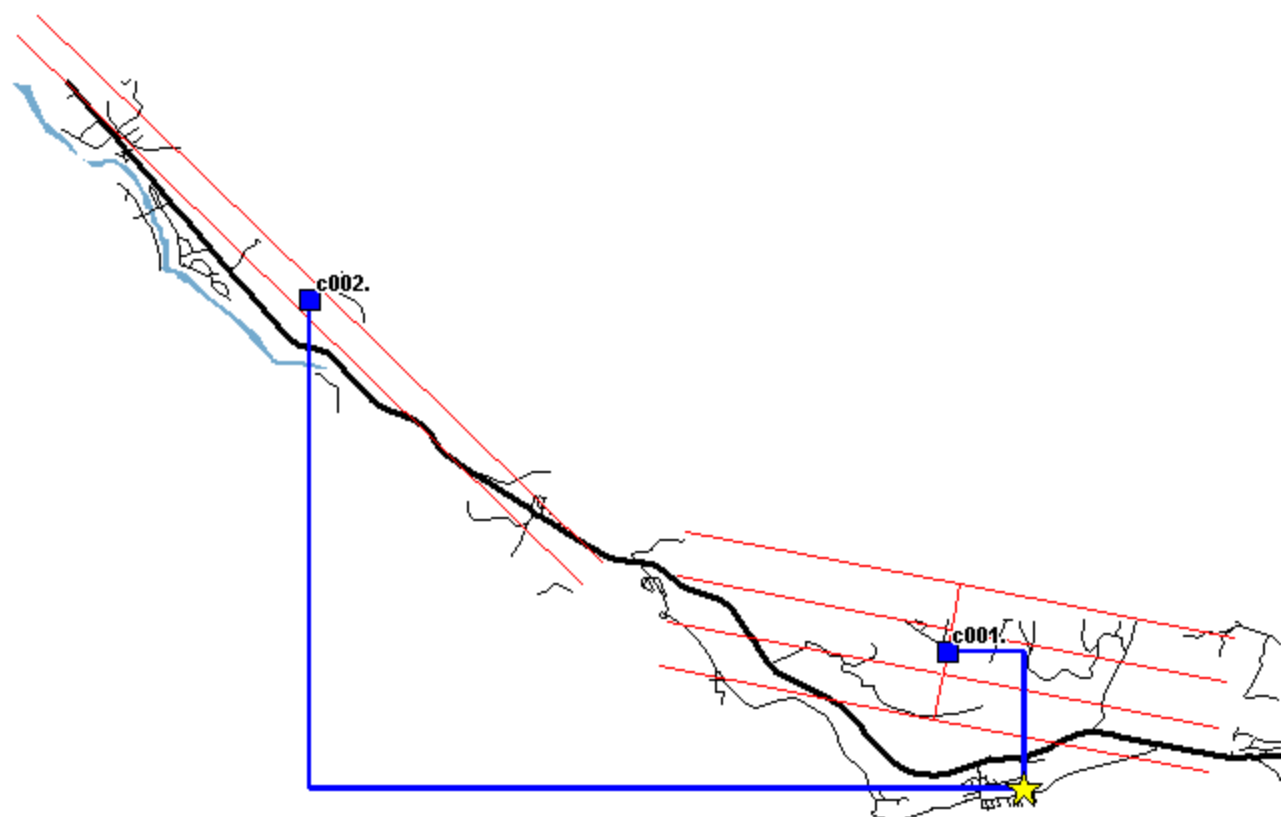
ROSLWAXA: HAI Network



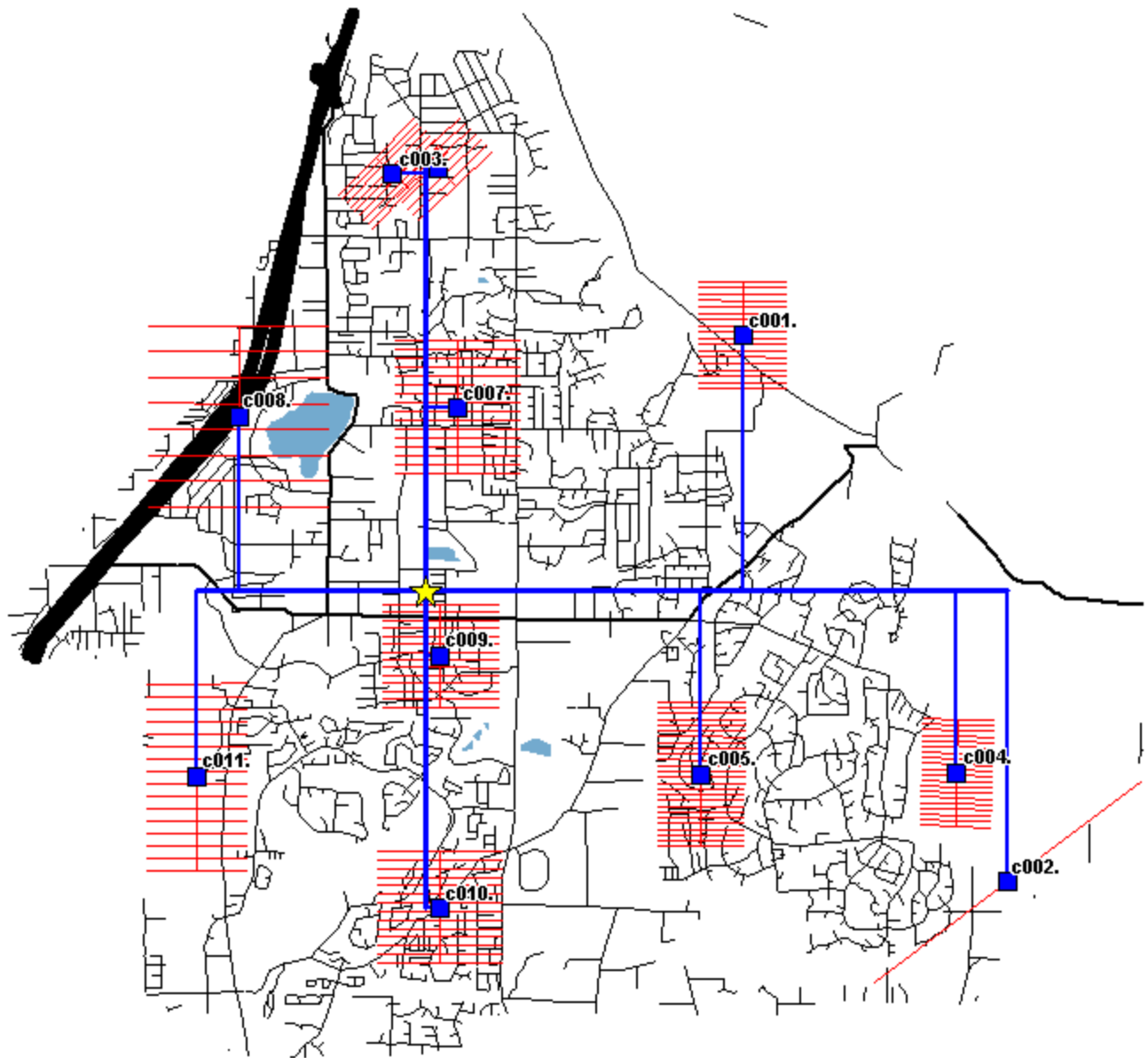
RPBLWAXA: HAI Network



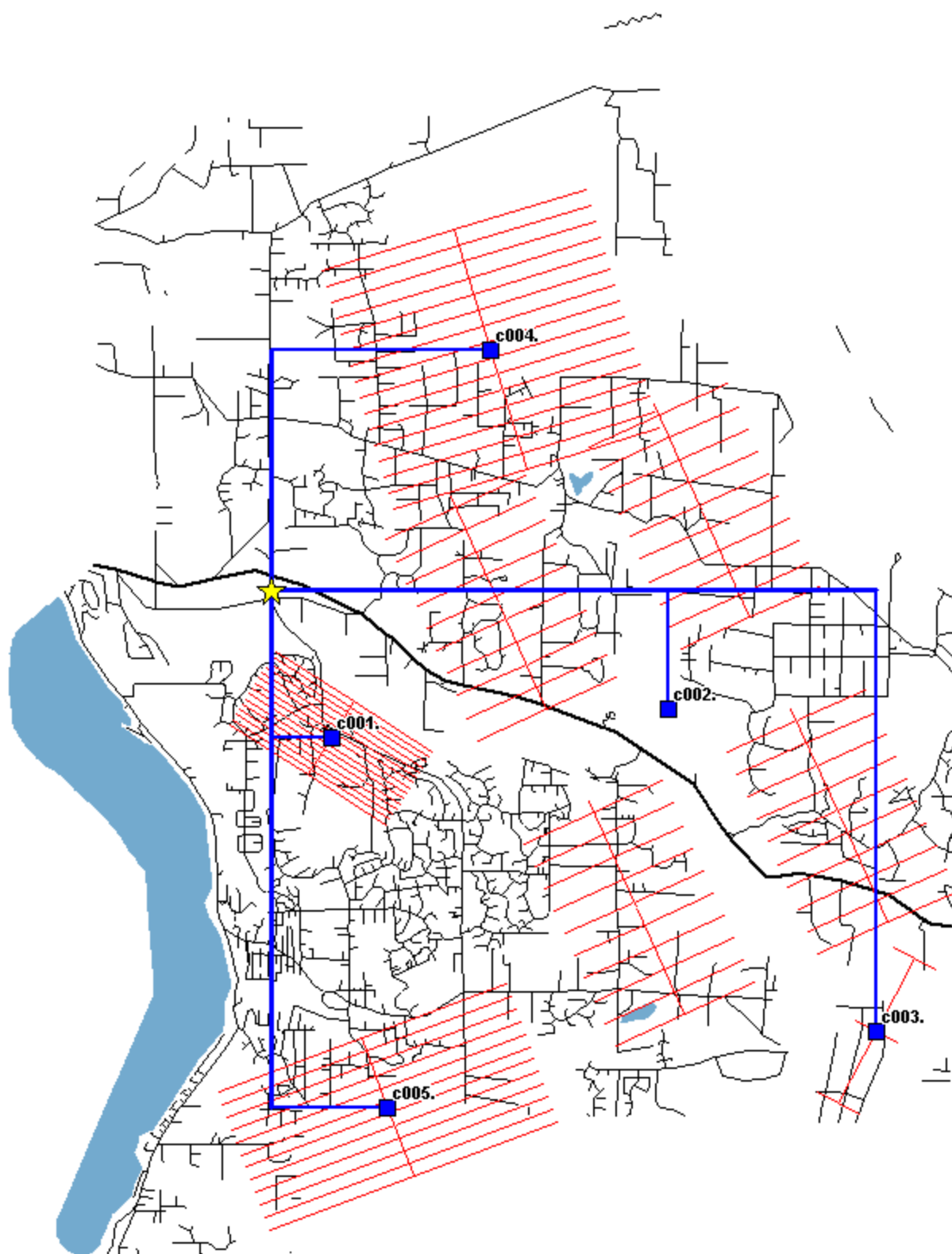
SKYKWAXX: HAI Network



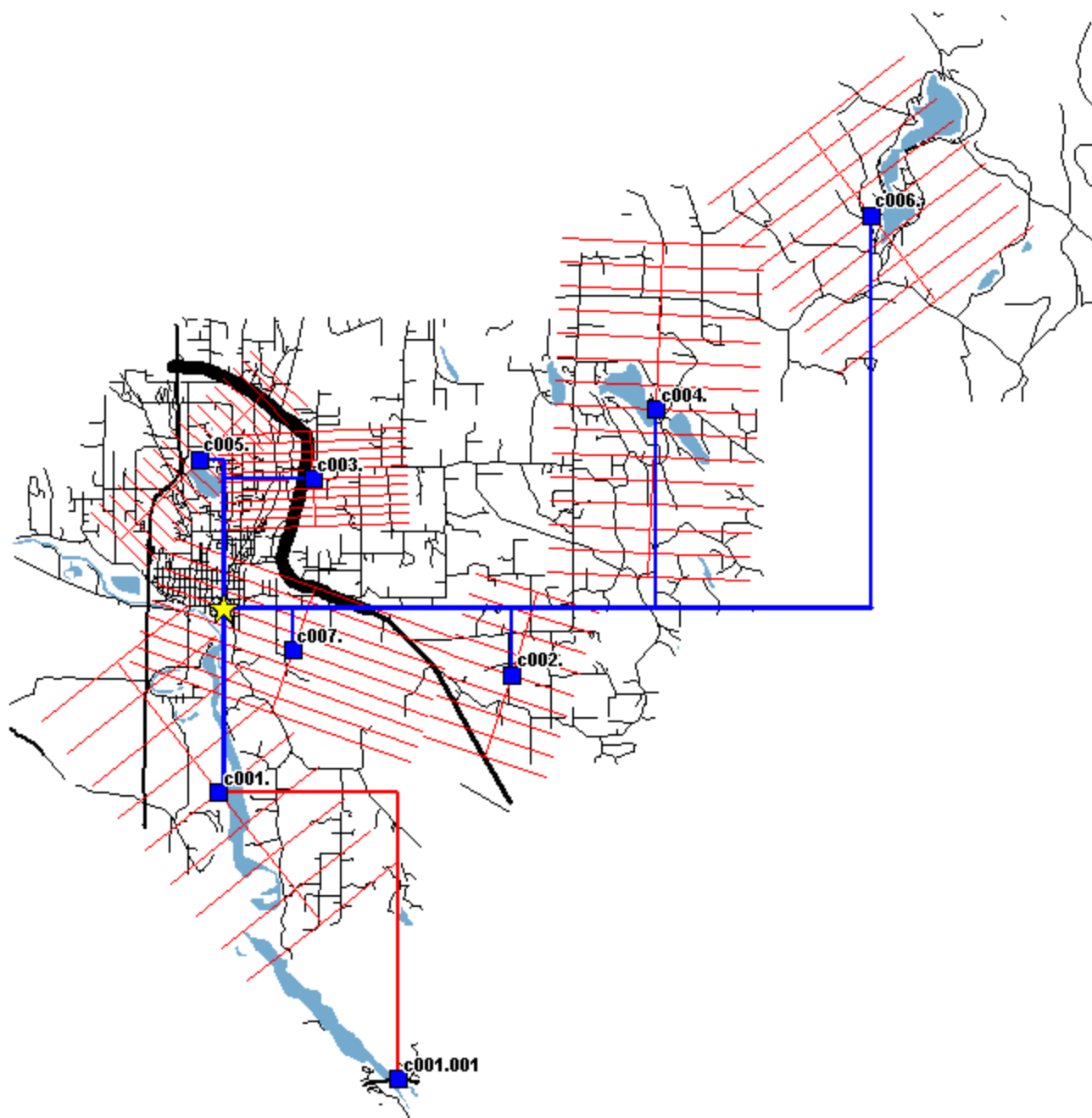
SLLKWAXA: HAI Network



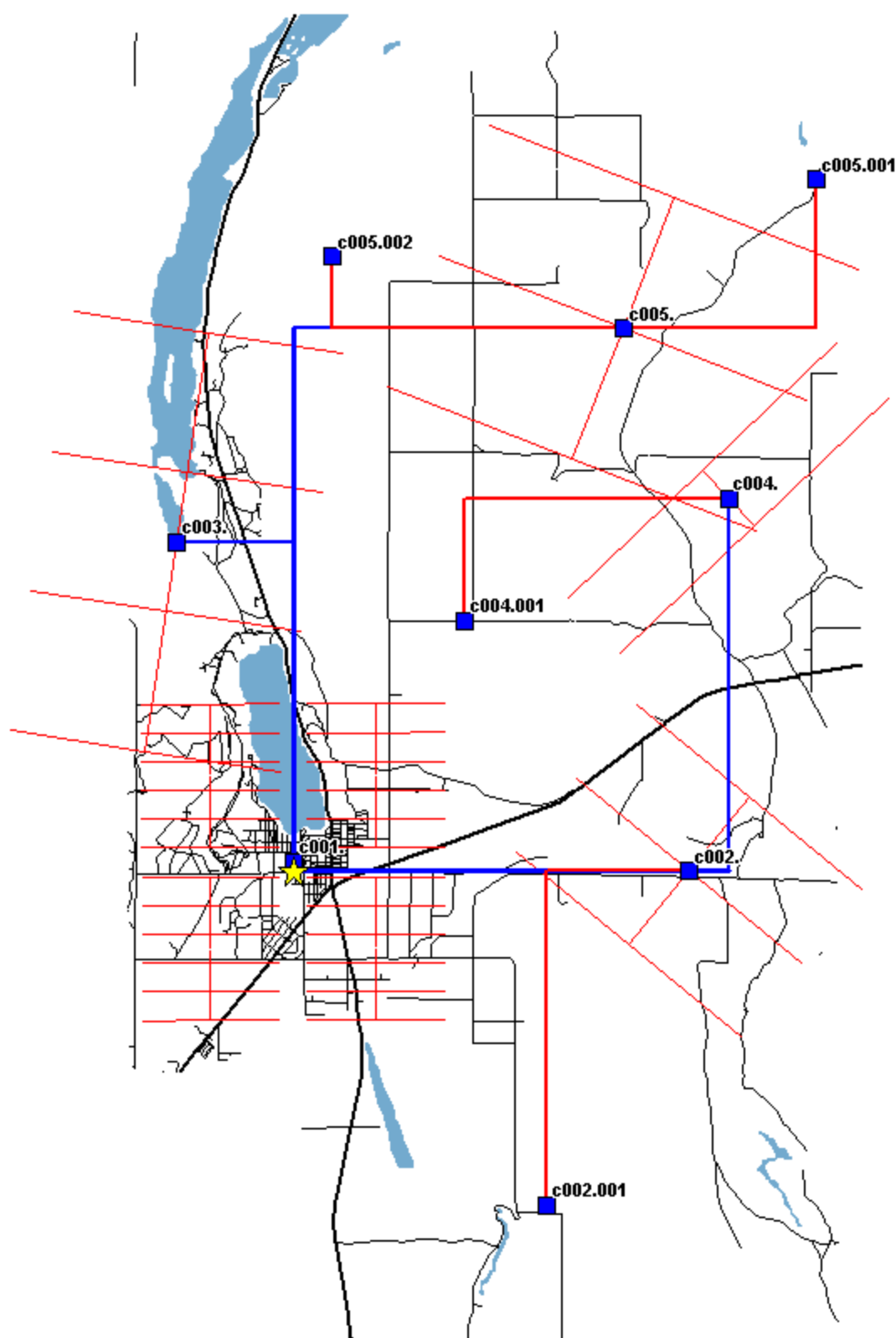
SMSHWAXA: HAI Network



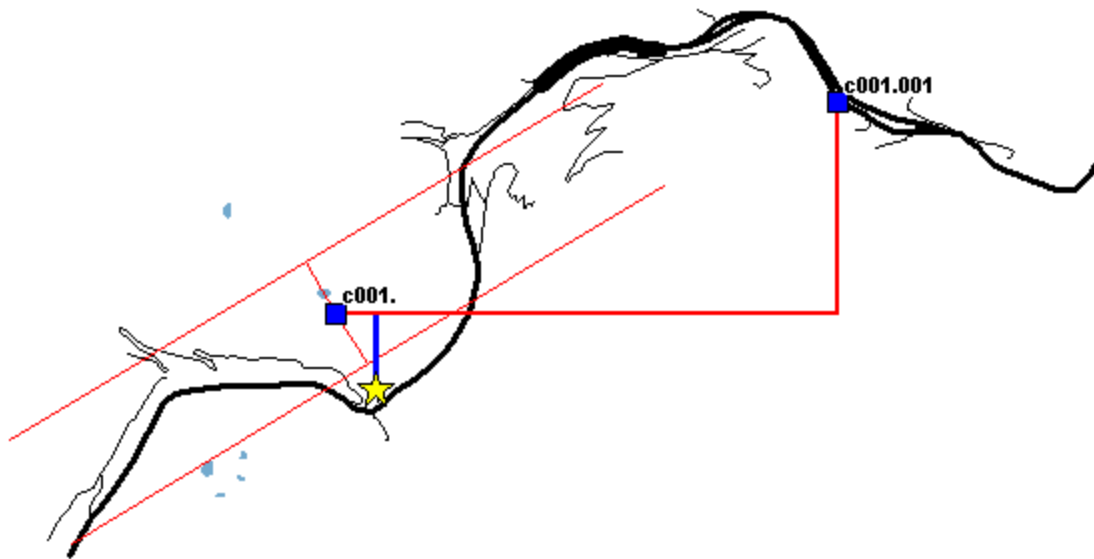
SNHSWAXX: HAI Network



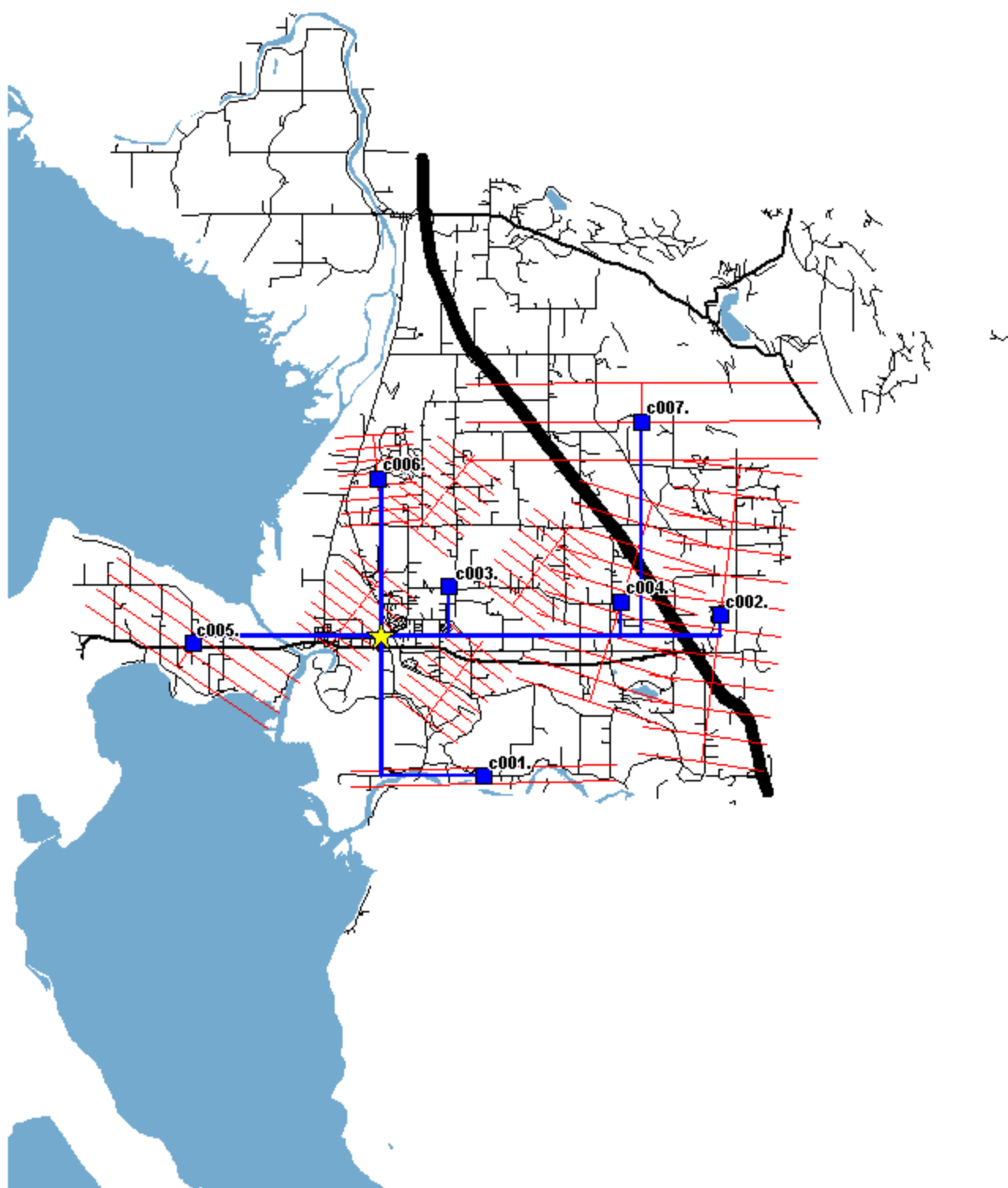
SOLKWAXX: HAI Network



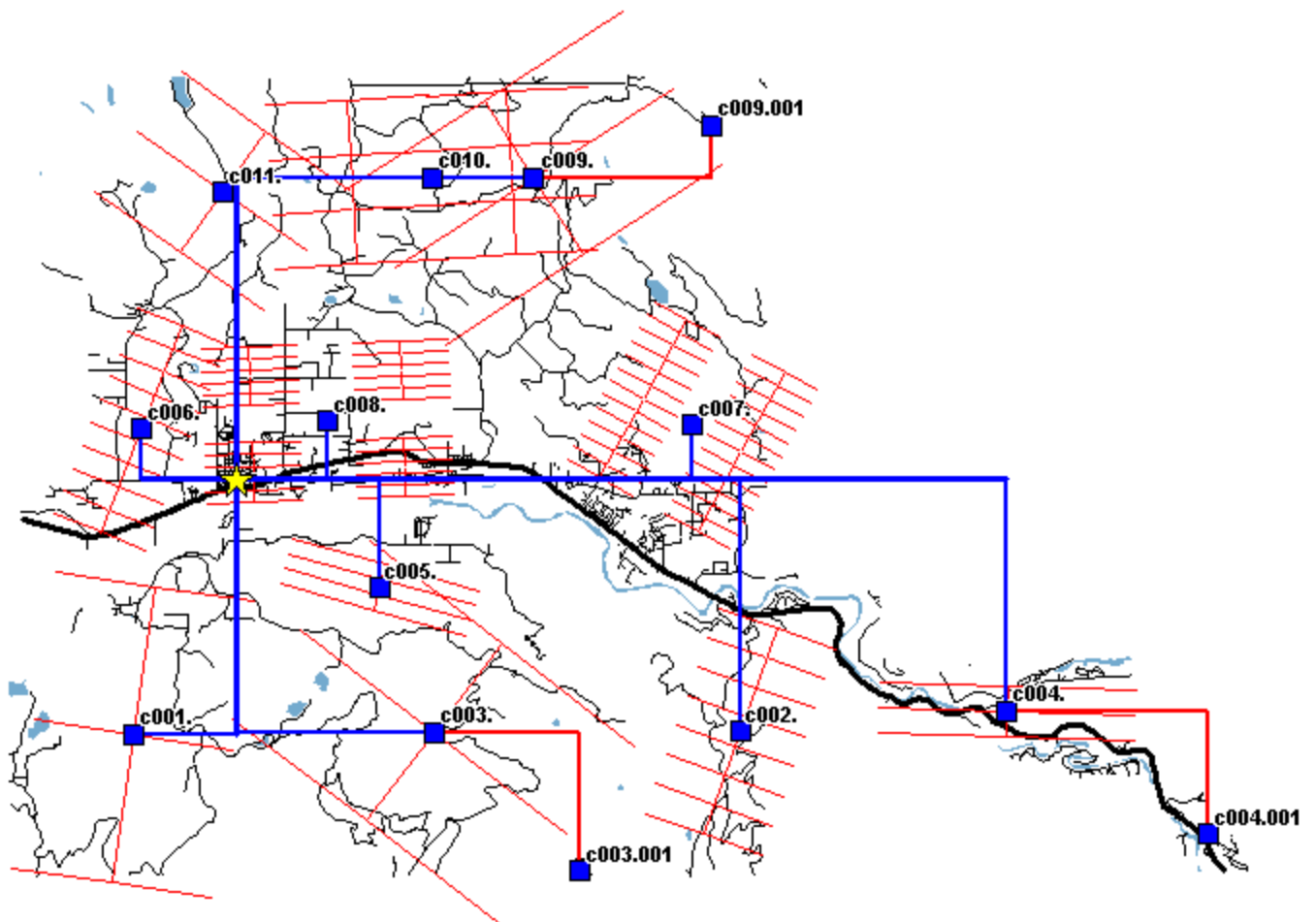
STPSWAXA: HAI Network



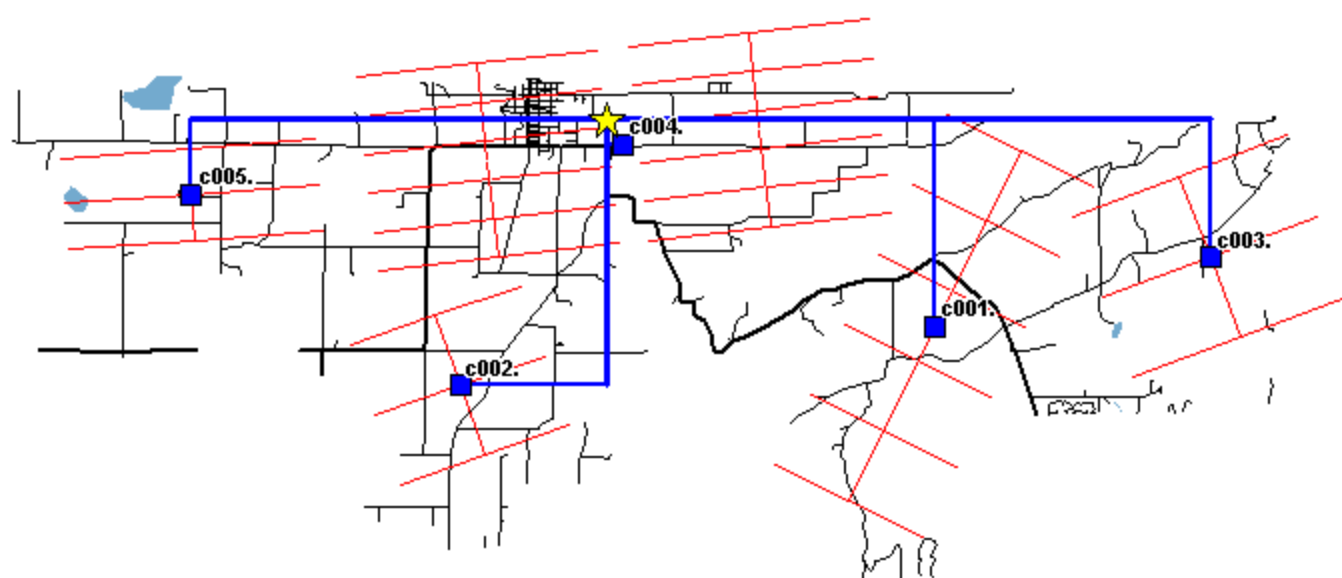
STWDWAXX: HAI Network



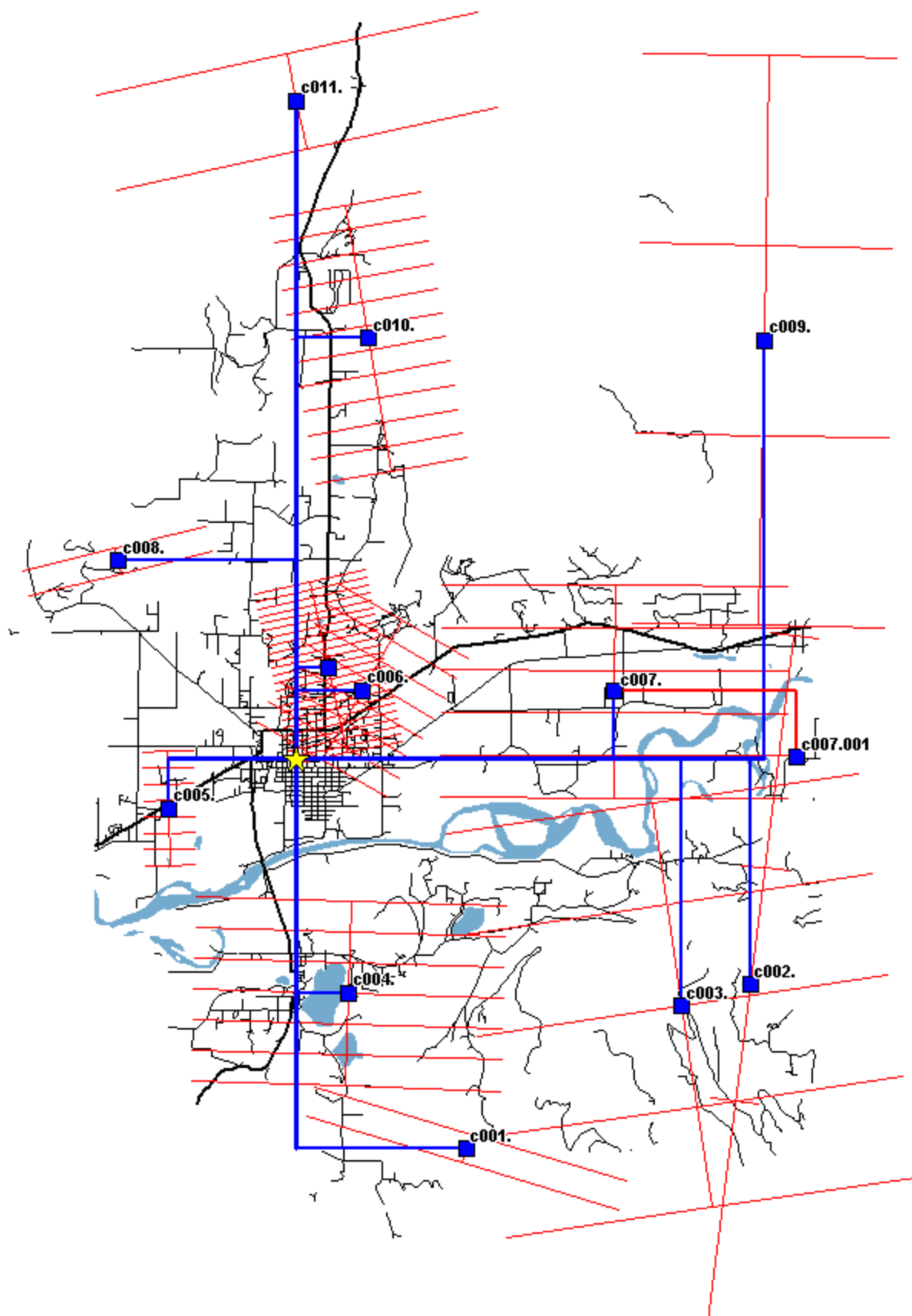
SULTWAXX: HAI Network



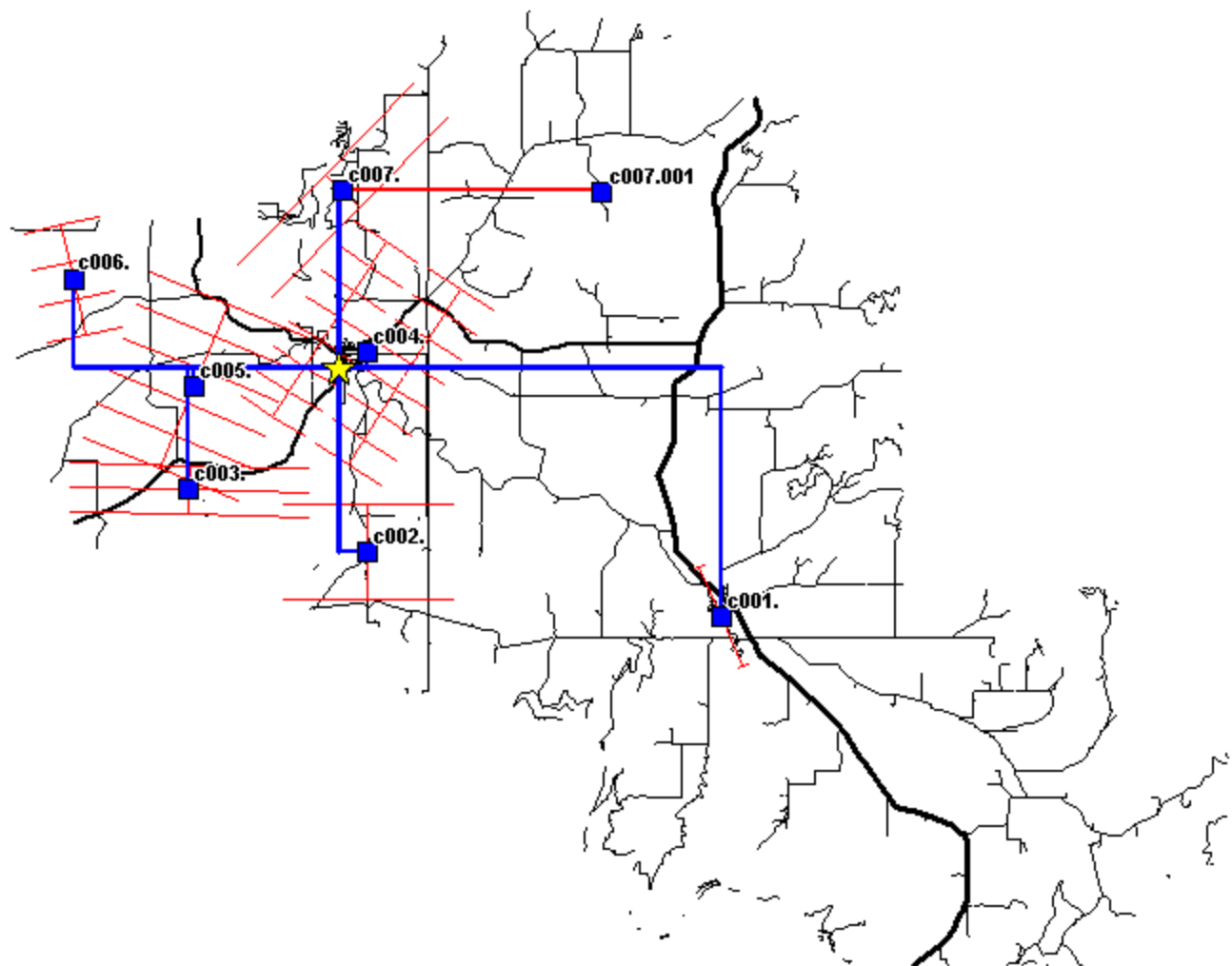
SUMSWAXX: HAI Network



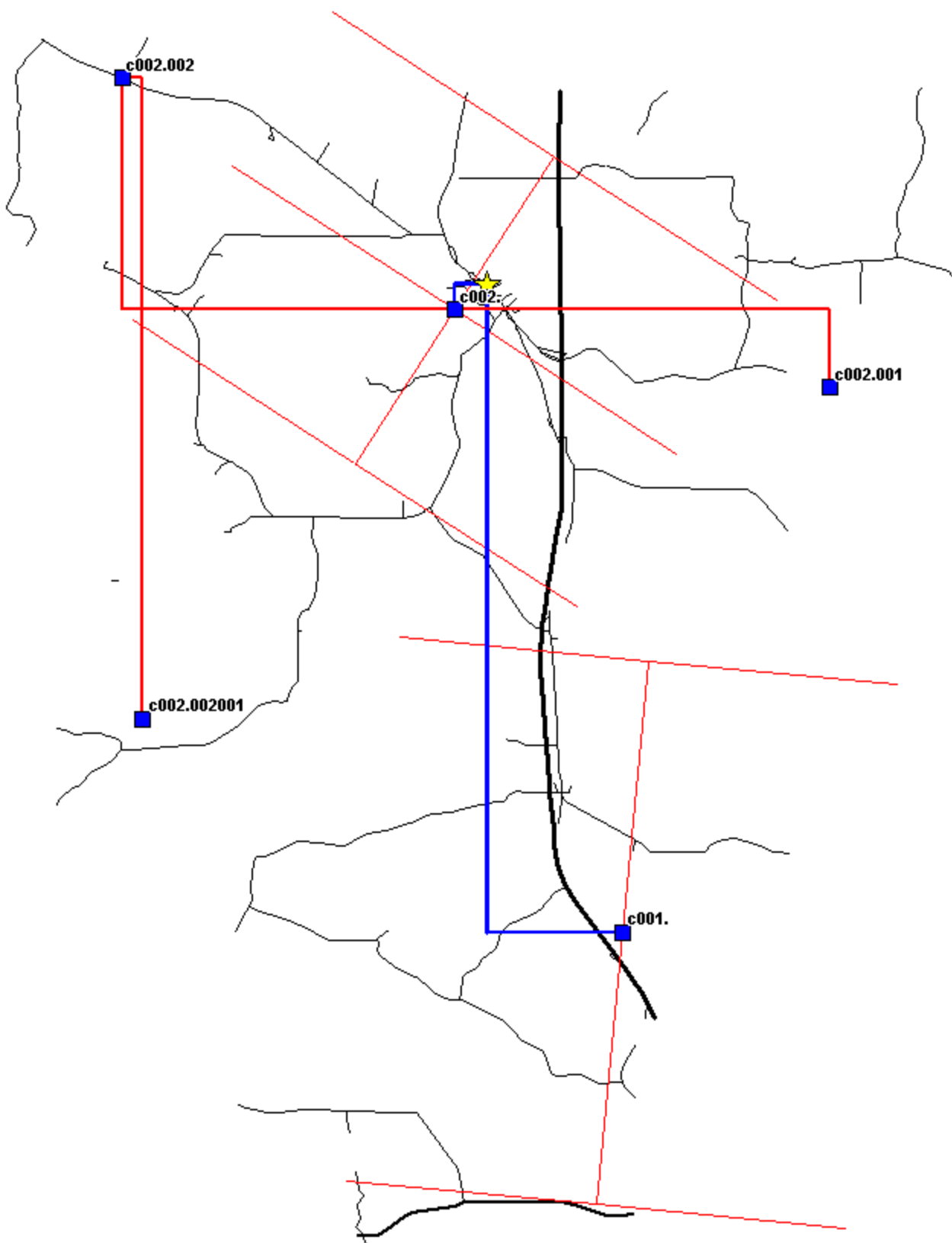
SWLYWAXX: HAI Network



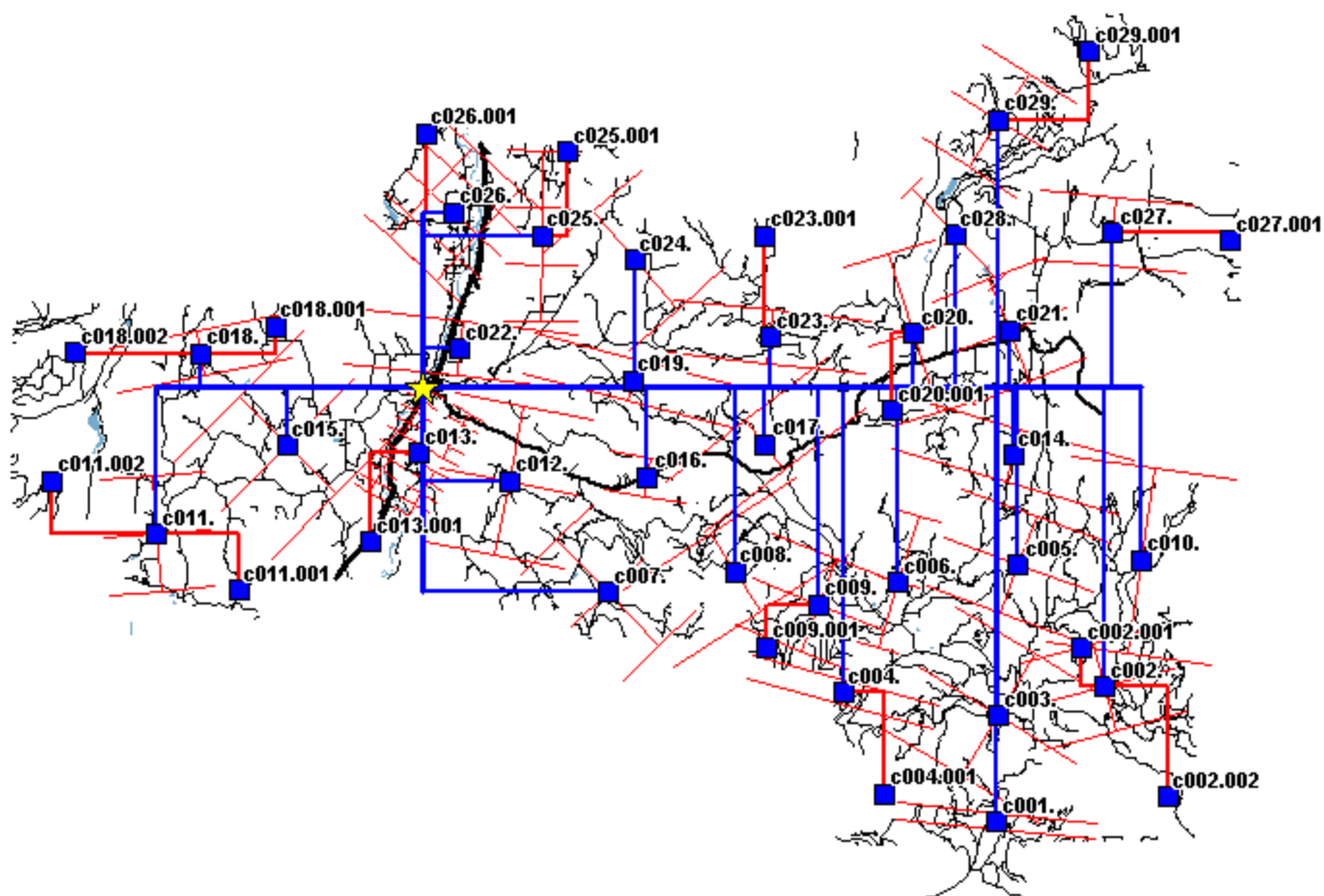
TEKOWAXX: HAI Network



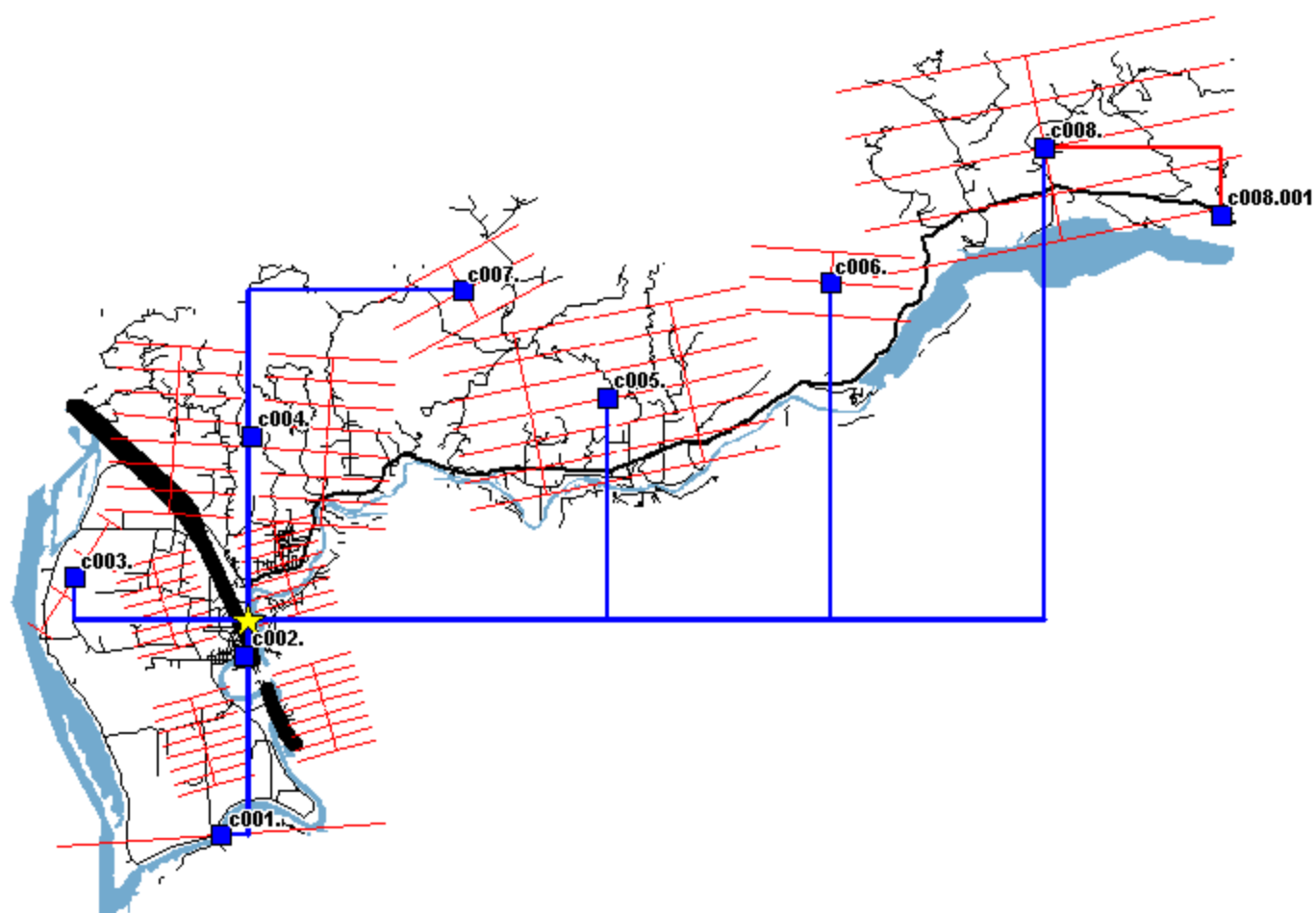
THTNWAXA: HAI Network



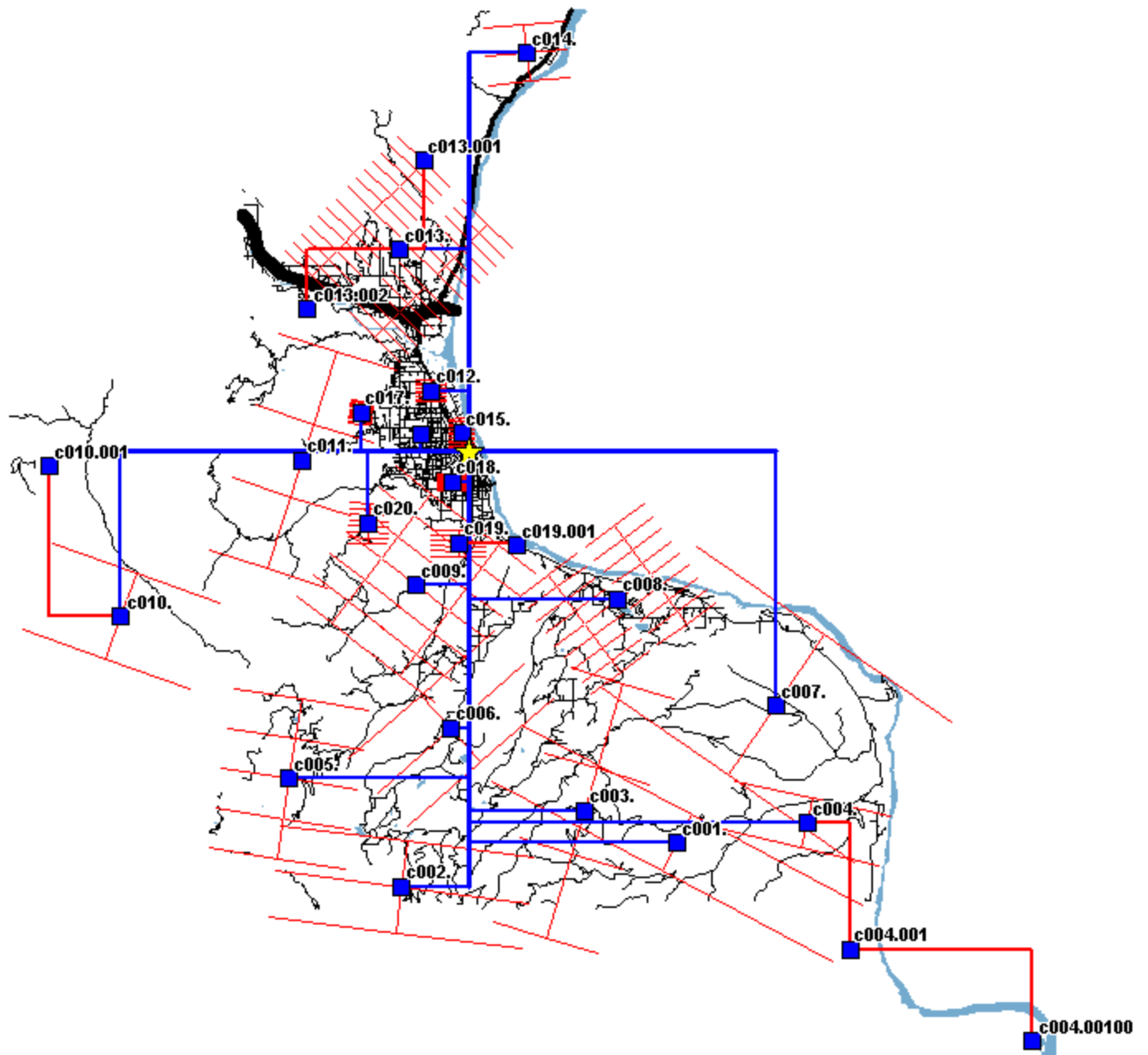
TNSKWAXA: HAI Network



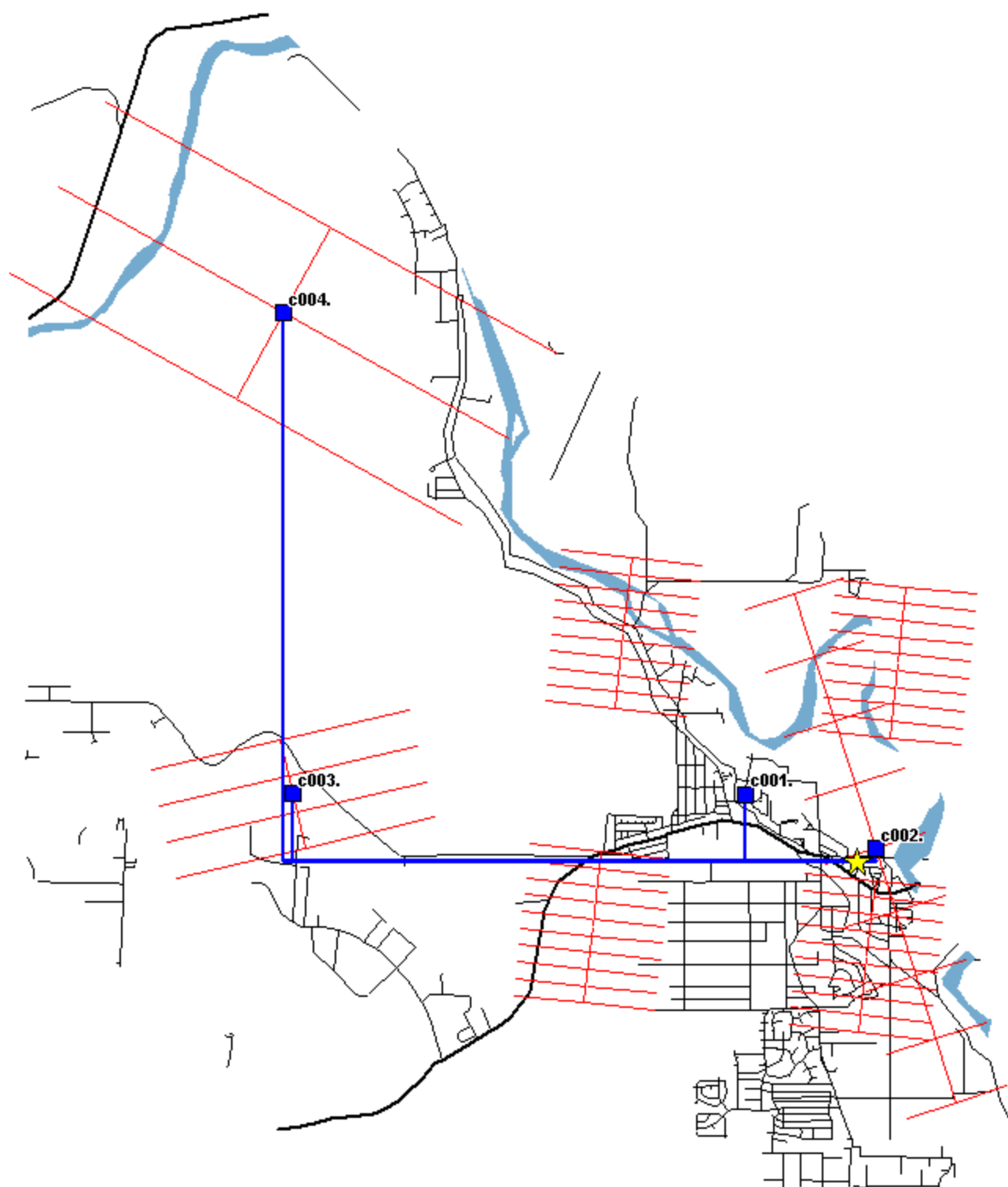
WDLDWAXA: HAI Network



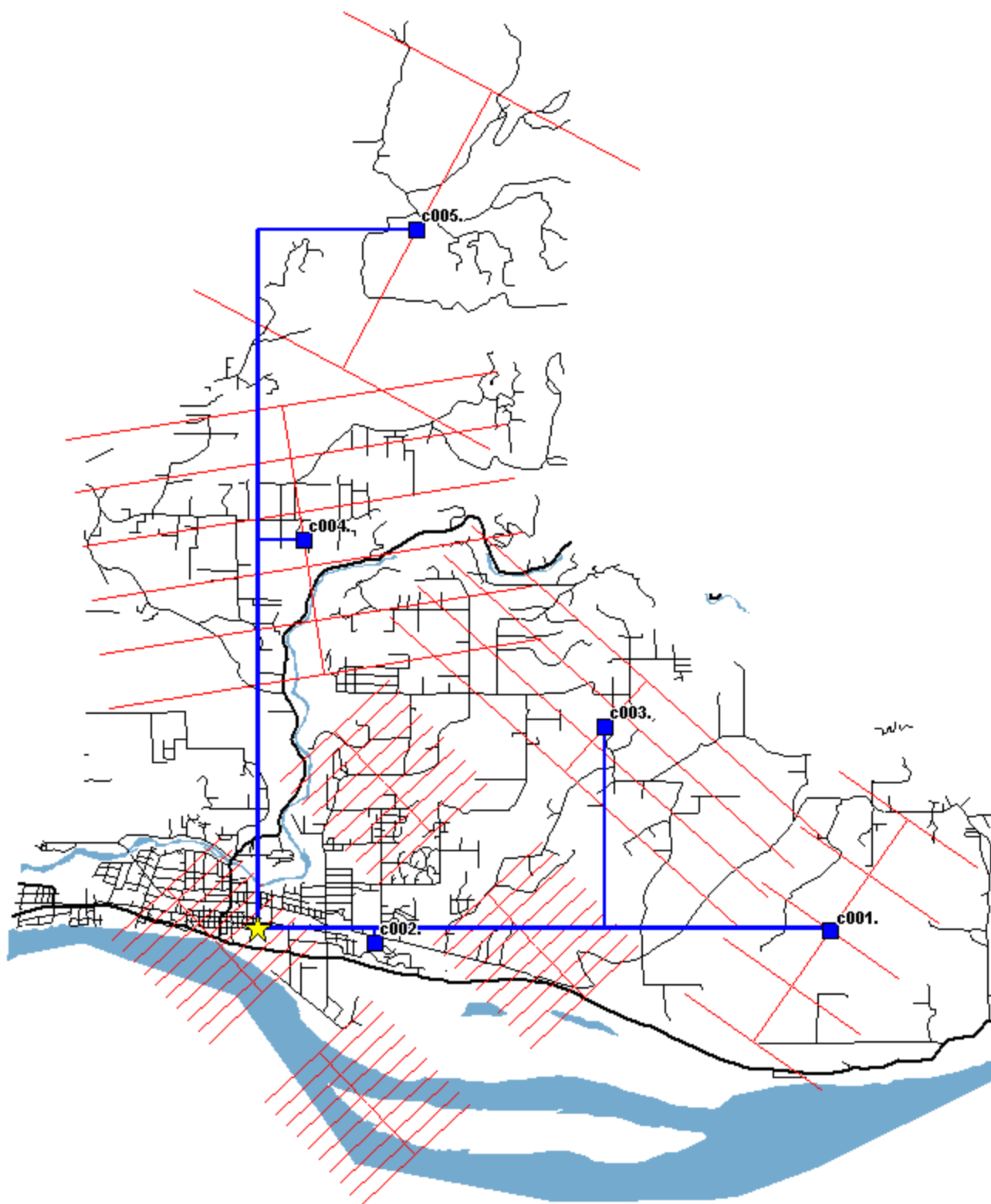
WNTCWAXX: HAI Network



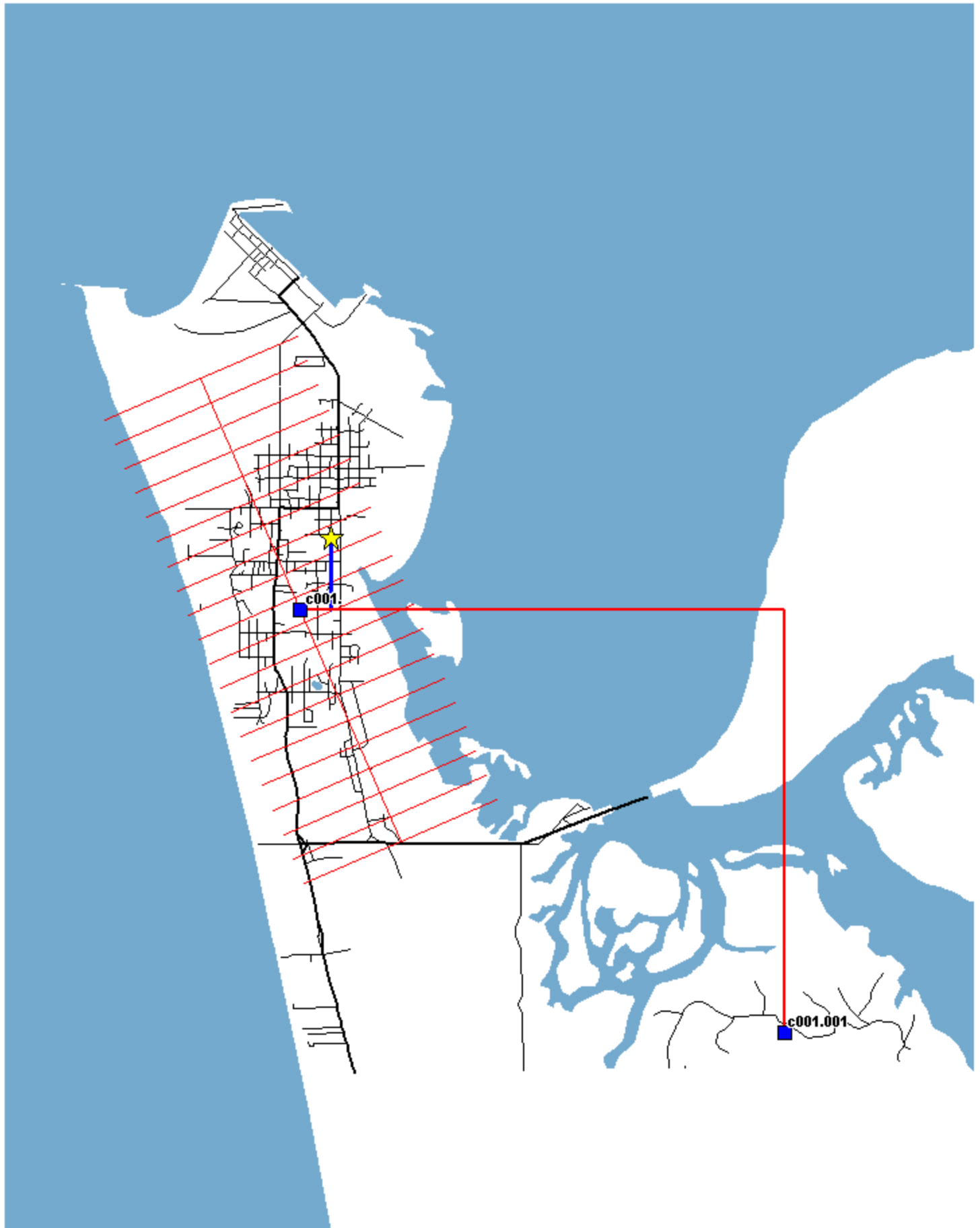
WRLDWAXA: HAI Network



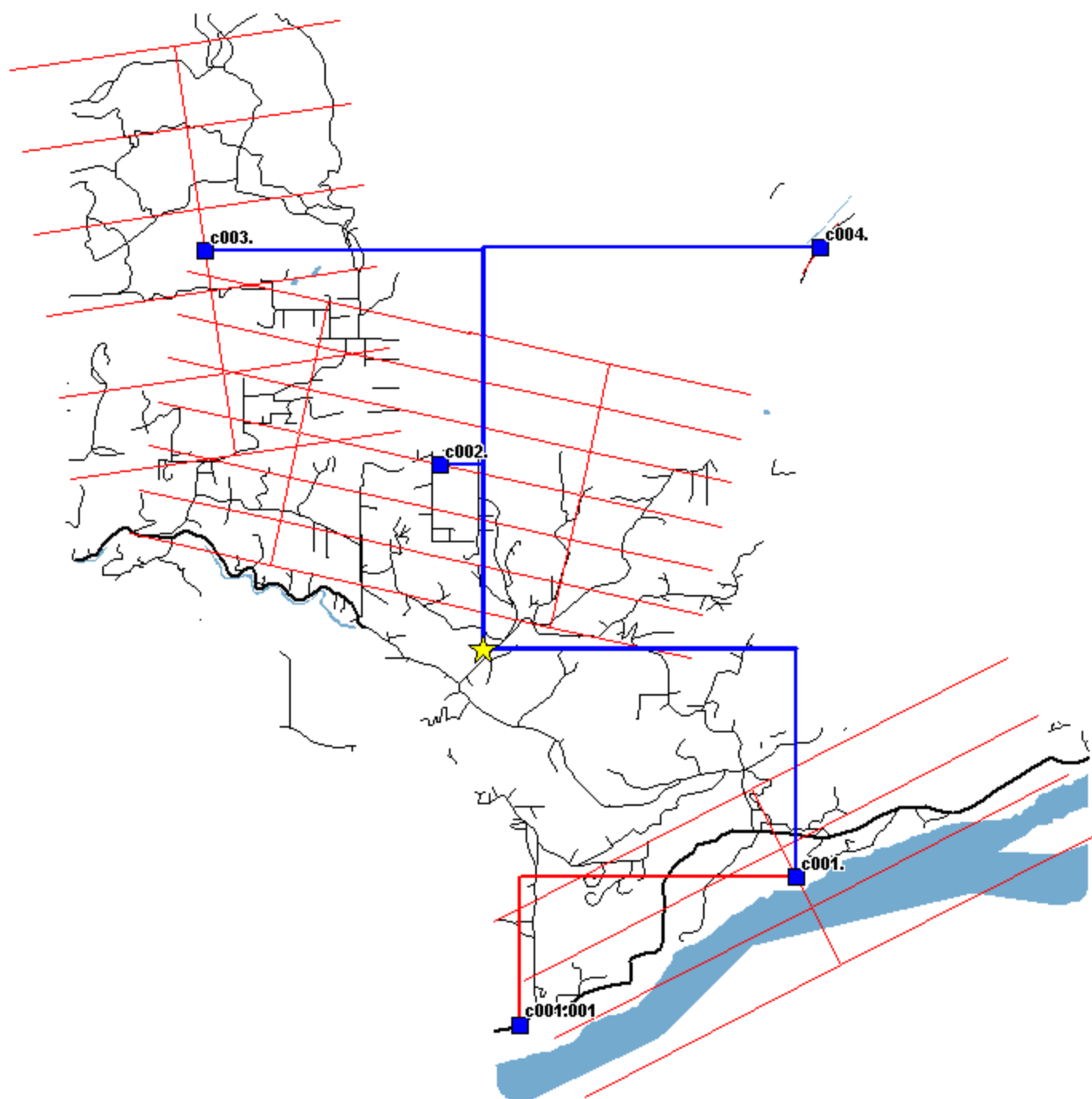
WSHGWAXA: HAI Network



WSPTWAXA: HAI Network



WSRVWAXA: HAI Network



WTVLWAXA: HAI Network

